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NORTHWEST ENERGY NEWS

Volume 5, No. 1 Northwest Power Planning Council *December/January 1986*

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INSIDE: AN ANNIVERSARY SPECIAL / FIVE YEARS WITH THE NORTHWEST POWER ACT

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N O R T H W E S T
ENERGY NEWS

is published bi-monthly by Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205

The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources

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Editor's Notes

An Anniversary Special

Five Years with

THE NORTHWEST POWER ACT

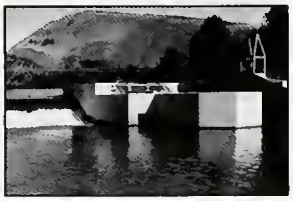
This special issue of *Northwest Energy News* is the cooperative effort of the Power Planning Council's public information staff and all of the people we interviewed. Interviews were conducted by Ruth Curtis, Steve Engel, Beth Heinrich (Idaho), Judi Hertz (Oregon), Dulcy Mahar and myself.

This issue is also the debut of our new art director, Portland graphic artist Stephen Sasser. Sasser's work as half of the design team, Nance-Sasser (with Lyn Nance, his wife), has been featured in Oregon publications, on numerous posters and album covers and in many gallery exhibitions.

In our last issue, we ran a photograph of the new fish ladder at the Wapato Dam on Washington's Yakima River. We called it the U.S.S. Wapato, which is what the locals in the Yakima area have nicknamed it. Unfortunately, we mixed up the pictures. The one below is the *real* Wapato Dam west branch fish ladder. It's easy to see why the locals think of it as their resident battleship.

COVER ILLUSTRATION: Northwest artist Anton Kimball created the birthday cake cover for this special anniversary issue.

—C.C.



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An Anniversary Special

Five Years with THE NORTHWEST POWER ACT

To assist the electrical consumers of the Pacific Northwest to achieve cost-effective energy conservation, to encourage the development of renewable energy resources, to establish a representative regional power planning process, to assure the region of an efficient and adequate power supply, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

Illustration by Anton Kimball

It's been said that one's task, regarding the future, is not so much to foresee it, as to enable it. On December 5, 1980, President Jimmy Carter signed an historic piece of legislation that was to have a profound effect on the Pacific Northwest. Public Law 96-501, the Pacific Northwest Electric Power Planning and Conservation Act, was designed to provide for the future electrical energy needs of the citizens of the four Northwest states of Idaho, Montana, Oregon and Washington. The Act carried a second mandate; to protect, mitigate and enhance those fish and wildlife in the Columbia River Basin threatened by the development of the region's great hydroelectric system. A third, equally important emphasis of the Act called for carrying out these plans and programs with the full participation of the citizens of the region.

If it's true that success has many parents, but failure is an orphan, the Northwest Power Act must be a success. Nearly everyone interviewed for this special issue admitted to laboring hard and long to produce a piece of legislation that met the needs of the broadest of constituencies. Only one admitted to being "among the three people in the Northwest who did *not* write the Act."

What follows is, in part, a review of the first five years' effort to carry out the mandates contained in the Act. But what follows is also a look at what major implementors of the Act *thought* the Act would accomplish. Congressman Jim Weaver of Oregon brings up the image of blind people describing an elephant; each of them "sees" a different elephant.

"I've got good news and bad news. The good news is, we got everything we wanted. The bad news is, so did everyone else."
Roy Hemmingway

What the

A Hemmingway Retrospective

There's a story they tell about how Roy Hemmingway broke the news to Oregon's governor that the Northwest Power Act had passed. He is said to have told Vic Atiyeh, "I've got good news and bad news. The good news is, we got everything we wanted. The bad news is, so did everyone else."

Oregon's Hemmingway was one of two Northwest Power Planning Council members who were actively involved in the creation of the Act. Gerald Mueller, though not involved to the degree that Hemmingway was, is the other Council member who was there when it all began in the late 1970s.

Hemmingway confirms the "good news, bad news" comment. "Every group worked to get protection for its interests in the Act. What was not clear was how those interests would work together once the Act was passed and all the changing circumstances of the real world had to be dealt with. While the public and investor-owned utilities, the direct service industries and the Bonneville Power Administration locked in protection for themselves, I was afraid their commitment to the welfare of the region as a whole got weakened."

It all began in 1977 with a bill backed by the Pacific Northwest Utilities Conference Committee [PNUCC]. "When a regional bill first got publicly talked about — this was the PNUCC bill — the utility system alone was to do all the planning," Hemmingway recalls.

"Governors Judge [Montana] and Evans [Idaho] both advocated a

June 1976
BPA issues Notice of Insufficiency to its customers.

March 1977
Oregon Representative Jim Weaver introduces in the House H.R. 5862, the Columbia Basin Energy Corporation Act of 1977.

June 1977
Oregon state legislature authorizes creation of the Oregon Domestic & Rural Power Authority (DRPA).

Sept. 1977
Washington Senator Henry Jackson introduces S. Bill 2080, the Pacific Northwest Electric Power Supply & Conservation Act. Bill was drafted by the Pacific Northwest Utilities Conference Committee. An identical bill introduced in the House by Washington Representative Lloyd Meeds.

Dec. 1977-May 1978
Senate and House committees hold hearings in Northwest on bills.

August 1978
Senator Jackson introduces S. 3418, The Pacific Northwest Electric Power Planning and Conservation Act. It is a revised version of S. 2080 based on the spring hearings. An identical bill introduced in the House of Representatives.

Aug., Sept. & Dec. 1978
Hearings held in Northwest and Washington, D.C., on the bills. Congress adjourns before legislation is completed.

Illustration by John Kurtz

States Wanted

regional siting council, a sort of 'gating' body that would decide whether a plant proposed by the utilities was acceptable. After the PNUCC bill was scrapped, Senator Henry Jackson introduced another bill in August 1978. This bill first had the idea of a plan for the region which would determine how much conservation, coal, and other resources would be needed. But it had Bonneville doing the forecast and the plan," Hemmingway adds.

"When Governor Atiyeh [Oregon] took office he started talking about what the states should do with regard to this bill. His aide Lee Johnson [former Oregon attorney general] suggested the idea of the council. I've sometimes been credited for the idea, but Lee was the first one.

"Governor Atiyeh liked the idea of a regional body to do forecasting and power planning, and Lee and I started a tour around the four states to see if there was interest among the governors to propose a joint set of amendments that would embody the idea of a regional council. He and I made a trip together to Montana to see Governor Judge. Lee met with Governor Evans, and Atiyeh and I flew up to see [Washington governor] Dixy Lee Ray." Hemmingway remembers that meeting as "fascinating."

During the PNUCC bill, the Northwest states, with the exception of Washington, had participated in the discussions on the bill. As Hemmingway puts it, "One cannot say Governor Straub [Oregon] and Dixy had a warm relationship." In fact, they had clashed a number of times. Atiyeh, however, appeared determined he was going to have a good relationship with Governor Ray.

Hemmingway was prepared for Governor Ray to reject the council idea. He assumed she would prefer the utilities to do the planning. Governor Ray was on record saying she didn't think government should have a bigger role than it already had. "Governor Atiyeh told me not to be so pessimistic," notes Hemmingway. Atiyeh met with her alone for about 20 minutes, then called in Hemmingway to give her details.

"Dixy was absolutely charming," Hemmingway says. "This image I had of Dixy Lee Ray as the Dragon Lady didn't prove to be true. I had known Vic from the legislature, but he had been in the minority party and hadn't carried much legislation, so I didn't get to know his skills. It dawned on me that day that here was a man who had made a great success selling Oriental rugs. He had the kind of soft salesmanship that this business required. He and Dixy got along just fine. If it had been any other Oregon governor, that relationship would have been strained."

With Ray on board, Atiyeh called together representatives from every state to draft amendments for the

"We had a pool going on how many votes the bill would get. I don't think anyone guessed high enough."
Roy Hemmingway

April 1979
S. 885, The Pacific Northwest Electric Power Planning and Conservation Act introduced to the Senate by:
Henry M. Jackson (WA)
Warren G. Magnuson (WA)
Frank Church (ID)
Mark Hatfield (OR)
James McClure (ID)
Bob Packwood (OR)

S. 885 is identical to S. 3418 of the 95th Congress. Amendments are introduced from the Governors of the four Northwest states. Bill sent to the Energy and Natural Resources Committee.

Representative Al Ullman (OR) and 11 other members introduce S. 885's companion bill, H.R. 3508.

Spring-Summer 1979
House and Senate committees study and hold hearings on bills.

June 1979
Additional amendments to S. 885 proposed by Senator Packwood.

Aug. 3, 1979
S. 885 passes Senate by voice vote. Referred jointly to the House Subcommittee on Energy and Power (Committee on Interstate and Foreign Commerce) and the Subcommittee on Water and Power Resources (Committee on Interior and Insular Affairs).

A Hemmingway Retrospective

Jackson bill now before Congress. "Those amendments were the genesis of the Council. That's where I met Gerald Mueller," Hemmingway adds. "Over the next several weeks we hammered out amendments dealing with the Council, model conservation standards, and guarantees of protection for the state siting and rate-making processes."

The governors submitted their amendments in April 1979. Hemmingway was given the full-time responsibility by Atiyeh to lobby the bill. After a while, the other states felt comfortable with him speaking for the states as a whole. During the next two years, Hemmingway spent more than six months in Washington, D.C. The bill passed the Senate easily in August of 1979 on a voice vote with the entire Northwest delegation behind it.

Meanwhile, in the House, the bill had two separate referrals. Traditionally power bills went to the interior committee. But Representative John Dingell's energy and power subcommittee of the commerce committee got the bill as well. "Very few dual referrals ever get out onto the floor," Hemmingway says. The House bill had to have four separate votes to survive, two subcommittees and two full committees before it went to rules and the floor. "When the bill finally did clear both committees, we had to get all of the recommendations reconciled in a process like a third committee."

"Public power was a very reluctant bride."
Roy Hemmingway

"As far as lobbying was concerned, there were two arenas we concentrated on. One was what was going on in Congress and trying to find ways to keep Representative Jim Weaver from killing the bill. The second was public power. Public power was a very reluctant bride. And everyone understood if any major group opposed the bill, it wasn't going to survive. Public power, along with the governors, had a big role in killing the PNUCC bill, and they were not happy with the bill that had come out of the Senate," Hemmingway explains.

"A lot of groups opposed the legislation, particularly the environmentalists. They saw public power as the place to kill the bill, so there was a lot of focus on public power. Public power understood something important though. Without a bill, Bonneville was going to allocate their power supply and that was going to lead to huge litigation — bigger than anything we have seen since the Act passed. Generally, public power liked the idea of the council because it meant someone besides Bonneville — with the investor-owned utilities and direct service industries whispering in its ear—would do planning.

"But as we got out of the commerce committee, thanks to amendments and the realization of the need for a new regional blueprint, public power began supporting it. The amendments it took to win public power's support probably resulted in a bill more complicated than it should have been. Some public power utilities wanted to make a condition for support of the bill that WPPSS [Washington Public Power Supply Sys-

March 1980
Representative Al Swift (WA) introduces H.R. 6677, which follows S. 885's format, but revises text to eliminate some ambiguities.

May 1980
House Committee on Interstate and Foreign Commerce reports to House on S. 885 and recommends passage with H.R. 6677 as an amendment. The amendment replaces the text of S. 885 with H.R. 6677. Also approved are Representative John Dingell's (MI) fish and wildlife amendments.

Sept. 1980
House Committee on Interior and Insular Affairs recommends passage with similar amendments.

Sept.-Nov. 1980
For five days, House of Representatives considers S. 885.

Nov. 17, 1980
S. 885 passes House. Vote is 284-77 with members from the Northwest supporting it 11-4

Nov. 19, 1980
Senate agrees to House's amended version of S. 885 by voice vote.

Dec. 5, 1980
President Jimmy Carter signs into law the Pacific Northwest Electric Power Planning and Conservation Act.

tem nuclear plants] 4 and 5 be grandfathered in. The only deception I heard was that some advocates of the bill were telling public power that 4 and 5 were a foregone conclusion," he recalls.

"This was an issue because the question being asked was 'where else are we going to get the power.' The answer, of course, is conservation. But to the utilities with their large stakes, it seemed 4 and 5 were the answer."

Virtually every environmental group in the Northwest and Washington, D.C., opposed the bill. Hemmingway believes these groups opposed the bill because it gave Bonneville authority to guarantee financing for nuclear plants. Environmentalists envisioned this would guarantee more nuclear plants. At the time, the environmentalists did not believe the Council represented a serious constraint to Bonneville. Nor did they believe the criteria in the Act for cost effectiveness were going to prevent Bonneville from acquiring nuclear plants, according to Hemmingway.

By the time the bill got out of its committees in September 1980, the majority of the Northwest House delegation was supporting it. When it got to the floor, Weaver proposed and discussed numerous amendments to it.

"We actually lobbied every member in the House," Hemmingway recalls. "After a series of delays, the bill passed 284-77 in November. We had a pool going on how many votes the bill would get. I don't think anyone guessed high enough."

"The Act really created a new constitution in the Northwest for the dwindling existing energy supply and for planning for new resources."
Roy Hemmingway

Now, five years after the bill was signed into law, Hemmingway has some strong opinions on how it is working. "What I didn't anticipate, other than the surplus, was that Bonneville would not play a leadership role in the region. By leadership role, I mean being the agency that forges union and consensus in the region. On the whole, although it is not universally true, Bonneville has protected itself as an institution more than it's furthered the regional interest.

"There will be a time in the future when a central institution with the authority Bonneville has been given will be needed. Bonneville may not be in a position of trust in the region to play that role.

"As for the Council, I think it needs to keep its focus on the long-term interest of the region. That focus has been diminished by Bonneville and some utilities. During the surplus they have taken a much shorter-term perspective. There is a real temptation when you are the only one pushing an agenda to argue points on someone else's agenda. The Council has to keep in mind its long-term agenda is the real agenda. The Council is going to be much more of a long-range, point-the-way body."

Addressing the Act, itself, Hemmingway says, "A lot of people have said the Act doesn't work because we're under different circumstances than contemplated at the time the Act was put together. I don't think that's true. The Act really created a new constitution in the Northwest for the dwindling existing energy supply and for planning for new resources. Whether we are closer to surplus or deficit isn't all that relevant when you're planning for the long term.

"I was relieved that we weren't faced with imminent deficit. Planning would have been done on a crash basis. We wouldn't have had the deliberation we went through for the model conservation standards. That deliberation will really pay dividends.

We had the opportunity to develop a blueprint for the future that has achieved such a broad consensus that some people believe the consensus has always been there, that it was a natural outcome of the 1980s. But," he emphasizes, "the idea that we'd rely on conservation and flexibility to meet resource needs was not an established regional principle prior to the Act."

Jan. 1981
Governors of Idaho, Montana, Oregon and Washington appoint a transition team to coordinate the formation of the Northwest Power Planning Council.

April 1981
The Northwest Power Planning Council is formed.

Nov. 1982
Northwest Power Planning Council adopts the Columbia River Basin Fish and Wildlife Program.

April 1983
Northwest Power Planning Council adopts the Northwest Power Plan.

Oct. 1984
Northwest Power Planning Council adopts the 1984 Columbia River Basin Fish and Wildlife Program.

Aug. 1985
Northwest Power Planning Council releases for public comment the Draft 1985 Power Plan.

What the States Wanted cont.

Mueller Recalls Working the Bill

His introduction to Washington, D.C., was inauspicious to say the least. A friend had invited Gerald Mueller to stay with him and had given him the address of his place on A Street. "I didn't know there were two A Streets, so I got into a cab and went to one of them. Rich had told me to walk in, so I tried to open the door. Someone yelled out 'Whaddya want.' So I got back in the cab fairly quickly.

"I was only 30. I had never been to Washington. Everything was marble; the doors were too high; there were these magnificent staircases. Then you'd find the staff packed like sardines in offices. We had to use cafeterias for conferences."

Back in 1977, Mueller, now a Northwest Power Planning Council member from Montana, was working for the state of Montana in the utility siting division of the Department of Natural Resources. Because of that, one day he was invited to a meeting in the governor's office.

"There, Hugh Smith, an attorney for the Pacific Northwest Utilities Conference Committee, described the PNUCC bill and told us how great it was. I didn't think too much of that. But the next day Frank Ivancie (then a city councilman from Portland, Oregon) showed up. Here we are way out in Montana and this guy from Portland shows up. That impressed us.

He said the bill was a bad deal and we'd better read it," Mueller remembers. "We had more meetings, and the more we learned about the bill, the more we didn't like it."

In May of 1978, just after Mueller had joined the lieutenant governor's staff, he was invited to an energy conference in Seattle. It was supposed to include all four Northwest governors as part of a panel. Since Governor Judge couldn't go, he sent his lieutenant governor and Mueller, who was asked to prepare the speech. "One of the things the lieutenant governor said was that it would be real nice to have some politically accountable body charged with electrical energy planning," Mueller adds.

Sterling Munro, then administrator for the Bonneville Power Administration, was the moderator of the governors' panel. Mueller recalls that Munro and some of the other representatives there were not particularly warm to the idea of a council. They thought it would be too political.

"Sometime later, the states started meeting and — partly due to their lobbying efforts — the PNUCC bill didn't pass. The next version of the bill made Bonneville a super agency. After that, the states got together seriously. We made a decision early on—a good decision—to focus only on the Council and how resources are selected. We drafted amendments that were signed by all four governors," Mueller explains.

"The bill wasn't going anywhere in the Senate until we showed up with the governors' package of amendments. We divided up into war parties and took key congressmen and senators. I was told it was the most heavily lobbied bill of the session.

"As soon as we got the four governors' signatures, the bill began to zip. The council concept got stronger. Senator (James) McClure put a lot of teeth into the idea, and (Mark) Hatfield beefed up the conservation aspects," according to Mueller.

"At this point, the bill had some fish and wildlife provisions, but nothing like the 4(h) section it ended up with. When it went to the House it had to have two provisions. First, protection for preference [see box, page 28]. A rate test was created which said public utility rates after the bill could be no higher than if the bill had not passed. Second, and (Congressman John) Dingell was instrumental in this, it had to have fish and wildlife protection." Mueller recalls a series of negotiations with utilities, tribes, and agencies resulted in the 4(h) sections of the Act.

When the bill passed out of committees, the two committee versions had to be reconciled. "Meanwhile, Congress went home, so the bill didn't get out of the House. When they came back, it was a lame duck session, and ordinarily you don't get much out of that," Mueller adds.

"When it passed, I had to call Roy and listen to the celebration over the phone."
Gerald Mueller

"Environmentalists never had been on board. The only thing we could get out of them was 'we don't trust you.' They foresaw the region would be swamped with thermal plants. They didn't think the bill would do what it said it would do.

"I was surprised at how intact the Council ended up being. Roy and I lost one battle which, frankly, I'm glad we lost. The original bill called for a Council of four. We thought it'd be the governors. We argued that expanding the Council would bring in special interest people — that you'd have a fish member, an environmentalist, a business member, labor, etc. As it turns out, the governors didn't appoint special interests. Although sometimes it'd be nice to have only four people to agree on something," he reflects with a grin.

The bill that finally passed had state support. "There really was a coalition of interests, with the exception of the environmentalists," Mueller says.

Because of a smaller staff back home, Mueller could not put the time in Washington, D.C., that Roy Hemmingway could. "I'd lobby, then go home. I always had to call Roy to see what had happened. When it passed, I had to call him and listen to the celebration over the phone."

Congress Reviews the

DAN EVANS, U.S. Senator from Washington, is a former three term governor of Washington and president of Evergreen State College. He was the first chairman of the Northwest Power Planning Council.

I first got involved in the whole concept of electrical power planning and who should do it during the early '70s, when I was governor of Washington, and I awoke one morning to find that Bonneville had just awarded a large contract to Alumax without any warning to or consultation with the state. The business of energy is so important to the Northwest that it simply cannot be conducted with no participation by the states.

Shortly after that episode I suggested in a speech to the Northwest Public Power Association that there ought to be a board of governors of Bonneville, whose members would be the governors of the states. I believe that was in 1972.

When I left office I didn't have a direct role to play in these matters for the next four years. I did come back [to D.C.] on Evergreen work from time to time, and I'd talk with Joel Pritchard, "Scoop" Jackson, and other members of the Northwest delegation. I had some concern that early talk about a regional power act didn't include participation by the states. There was no planning council in the works then. It was seen as a purely federal operation at first. The council came [into the bill] late.

I also had some concern about two members from each state, when Washington and Oregon had by far the largest electrical use and problems. But that structure turned out to be the best thing. I'm afraid if the Council had been weighted in favor of the heaviest user states it would have been much harder to get the regional perspective, balance, and independence from special interests. Things turned out much better in that respect than anyone could have anticipated at the time.

With my engineering background, my experience as governor, and with my own strong views that we have a regional voice in electricity, I became involved in the state activity surrounding passage of the Act. Then I was appointed to the Council.

The night before we had our first meeting we all gathered together, just to get to know each other. Many of us had never met before. We were of widely different backgrounds, personalities, ages—just as disparate as you could get. I almost never heard anybody speak out on the point of view of just one state. There was such a strong devotion to the regional concept and a regional plan. I would count that as the most remarkable result of the process. We were not always unified on individual issues — but on the importance of a regional perspective, we were entirely together.

"The business of energy is so important to the Northwest that it simply cannot be conducted with no participation by the states."
Senator Dan Evans

We always worked toward what I call "Evergreen consensus." We tried to avoid voting until we could find out each person's objections on an issue. One by one, we narrowed areas of difference. Of course, there were votes and not all unanimous. But on the fish and wildlife program and the power plan we had total unanimity. I think that was very important, especially the first time around.

The Council was one of the most rewarding experiences I've ever had. It's rare that anybody gets to step in and be handed a clean piece of paper, a new and untouched enterprise, and set the course. It was a rare privilege. We had eight remarkable people who were willing to fight for an important new set of principles. The result was a lot better than it might have been.

We were in uncharted territory. A lot of concern was expressed at the time—especially by utilities who worried about the new player on the block, and about Bonneville's new role. I know some utilities were afraid we might interfere with their well-established relationships. And we did. But the end result was to make things better.

Bonneville has assumed some new responsibilities foreign to their traditional ones, and carried them out well. I think we were very fortunate to have as perceptive a person as Peter Johnson at the head of Bonneville. I think he's done a very good job—and a very good job of working with the Council.

I told him back then that I thought the relationship between Bonneville and the Council should be one of creative tension. And it has been.

The fish and wildlife program has worked very well—not just the technical plan but in the growing relationship between the tribes and the many agencies. They recognized that they all had to work together to achieve their purposes. And that working relationship has made it possible to conclude agreements in areas the Act doesn't cover, such as the U.S./Canada Salmon Treaty and issues concerning coastal streams and Puget Sound.

Lately there's been a new set of problems. Of course, everyone has had to shift gears to handle the surplus, instead of the shortages we expected. But there are also very different circumstances now surrounding the relationship between publicly and privately owned utilities. One of the current large difficulties is the question of whether public and private utilities are going to be able to work together to secure future supplies of power.

We may be at the point in the next couple of years where we need to have an extensive series of hearings on the Act, to see how it's working and what potential there is for modifying and improving it.

Everybody is reluctant to meddle, but I think we're getting closer to that time. After five years—after this power plan is approved—it may be time for a good review. We ought to take another look at the exchange and the end goals of the Act. We may want to revisit the relationships the Act initiated — how the investor-owned utilities and public utilities are fitting together, and so forth.

We need to continue efforts to protect and enhance the fish and wildlife of the Columbia Basin. I think the start has been a good one. We have a good chance to see a major restoration of fish on the Columbia. It may take a long time, and we may not live to see it. But it's well underway.

I'm pleased that the Council did respond to the Act to produce a respectable fish and wildlife program and power plan. The fish and wildlife program will work. The power plan is a little more difficult, but the Council has contributed to everyone looking at new alternatives. In those respects, it's been a very fine start.

I think we're at the point where we have agencies in place and working together, and we're not very likely to run into serious electrical power problems such as we had in the '70s. I think we'll have sufficient supply and reasonable pricing.

The Act was a landmark, and it is now being looked at much more strongly by other states and regions. I'm working on a piece of legislation that will make it easier for states to join together to do this kind of planning, without extensive compact considerations. People in New England, the Midwest and the Southeast are quite interested. We should be introducing a bill sometime next year.

"We may be at the point in the next couple of years where we need to have an extensive series of hearings on the Act, to see how it's working and what potential there is for modifying and improving it."
Senator Dan Evans

JOHN D. DINGELL, U.S. Representative from Michigan, has long been known for his work on behalf of the nation's fish and wildlife resources. In 1980, when the Northwest Power Bill came before the House Committee on Energy and Commerce, which he chairs, he was instrumental in incorporating language calling for equitable treatment for the Northwest's fish and wildlife affected by the development and operation of the federal hydropower system.

The Pacific Northwest Electric Power Planning and Conservation Act has worked far better over its five years than I had hoped. Many things have contributed, including a reasonably cooperative spirit in the Northwest, together with a recognition of changing energy and natural resource needs. Very close Congressional oversight has also played a role, particularly our hearings in September 1984 involving many Northwest players and the Federal Energy Regulatory Commission [FERC].

The provisions of the Act requiring sound energy planning, with emphasis on alternative energy sources and energy conservation, have been beneficial. Although still needing continuing close scrutiny in their implementation, the fish and wildlife provisions have proven a model. Indeed, I think those provisions are sufficiently well-crafted so that I have been striving to see similar statutory language adopted nationally in legislation on hydroelectric power relicensing, which we are now considering.

"The Pacific Northwest Electric Power Planning and Conservation Act has worked far better over its five years than I had hoped." John D. Dingell

AL SWIFT, U.S. Representative from Washington, was instrumental in gaining passage of the Northwest Power Act in 1980.

The benefit of hindsight, five years after passage of the Northwest Power Act, brings into sharper focus the strengths of the Act, as well as areas that may require further work on a regional basis. Nevertheless, without denying that more work needs to be done, those of us who worked for its passage can take great pride in our work, especially in the mechanisms for public participation, and in the creation of the Northwest Power Planning Council.

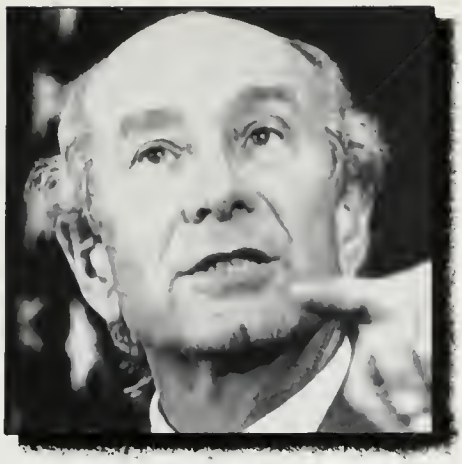
The Council has served as a national model for comprehensive and cost-effective regional power planning. Other regions now look to the leadership of the Pacific Northwest with a noticeably jealous eye, and legislation has been introduced that would allow the formation of similar power planning councils in other regions.

In addition, the balance struck between power planning and fisheries management has worked well, and should be a source of additional pride.

Finally, for the first time, conservation was viewed as an energy resource, establishing a precedent which the rest of the nation is beginning to follow.

The years ahead will present unique challenges and difficult situations. Because of the solid bedrock provided by the Northwest Power Act and the Northwest Power Planning Council, we in the Pacific Northwest can, with confidence, build on the stable foundation we have put in place over these last five years.

"Finally, for the first time, conservation was viewed as an energy resource, establishing a precedent which the rest of the nation is beginning to follow." Representative Al Swift



JIM WEAVER represents Oregon's Fourth District in Congress. He chairs the interior subcommittee on mining, forest management and Bonneville Power Administration. Weaver also served on the interior committee at the time the Act was being legislated.

There were three things I wanted at that time. I wanted the Bonneville Power Administration to be held responsible to the people of the Northwest; I wanted to get as much energy as we could from conservation and renewable resources; and I wanted to make sure there were cost-effectiveness restrictions on any new projects.

Meanwhile, the famous — or infamous — Northwest Power Bill was being negotiated in secret by utility interests, and it didn't involve any of those aims. That bill — in 1977 — was simply to finance nuclear plants. It proposed a 17-member advisory commission with no authority, made up entirely of representatives from utilities.

I was responsible for killing that bill. I sat in on the water and power subcommittee and I stopped that bill. And I fought fire with fire by proposing a bill of my own. My bill included an independent council with representatives elected by the people of the Northwest. It was similar to the Power Planning Council but with more authority. And I had provisions for conservation, renewables, and cost-effectiveness.

So they went back to work — the lawyers and the utility people and Bonneville. They took provisions from my bill and wrapped them around the old Northwest power bill. They used the idea of a council, and some parts about renewable resources and conservation. But not cost-effectiveness, because that wouldn't fit in with nuclear power. Then members of Congress said to me, "This is just like your bill. You'll support it now, won't you?"

Well, I forced them to put cost-effectiveness restrictions into the bill. But I still didn't like the bill, and I still don't. And I don't know of anyone who does. Everybody hates it. Public utilities, private utilities, industry, everybody. They're like the five blind men feeling the elephant, and each of them hates a different part of the elephant.

I filibustered against that bill, you know. I was only the second person in the history of the House to filibuster a bill on my own, and the other one was my great-grandfather, James Weaver, in 1877. I submitted all kinds of amendments. They were good amendments, too. People would like the Act much better if my amendments had been adopted. I wanted to kill WPPSS [nuclear plants] 4 and 5. Not just because I'm antinuke. I don't like nuclear energy, but I felt the Northwest couldn't afford to spend $30 billion on *anything*. I was sure that if we built those plants, electricity would go up and people would use less, and we wouldn't need those plants or be able to pay for them.

And I wanted Bonneville run by a regional board of directors elected by the people — not appointed by the governors. I wanted any major projects subject to a vote of the people. That was one of my key amendments. There were about 20 key amendments. I would have settled for any of them, and gotten out of the way of that bill. But they just ran over me finally. They know now that I was right.

The Act is a disfigured, idiotic piece of muck, with a few pretty little stones in it — like the Power Planning Council. The best thing about [the legislation] was you guys.

I'm not sure the Act's had a great deal of effect, except it's screwed up a lot of things. It was a can of wiggly squiggly worms, a halfway deal that didn't do the job. The whole power situation in the Northwest is not working. Bonneville is neither fish nor fowl. It's not answerable to the ratepayers of the Northwest because it's a federal agency. But it's not answerable to Congress because it's self-financing. It's just sitting out there without any checks or balances. It's just the worst of all possible worlds.

I'm proposing a bill that would do away with the Northwest Power Planning Council and replace it with a representative authority — the Pacific Northwest Power Authority. It would be an actual board of directors that would take over Bonneville, do the hiring and firing. The members would be elected proportionately, with two representatives from Oregon, three from Washington, and one each from Idaho and Montana.

Bonneville's Point of View

PETER T. JOHNSON is the administrator of the Bonneville Power Administration.

Remember the enthusiasm that greeted passage of the Pacific Northwest Electric Power Planning and Conservation Act in 1980?

Bonneville had its work cut out for it as the agency mobilized to execute power sales contracts and launch new conservation and resource acquisition programs.

Without benefit of precedent, BPA and the Northwest Power Planning Council would have to test a new relationship. This separation of the planning and executing functions was unprecedented in the Northwest, and probably anywhere else.

BPA would also play a leadership role in launching programs to "protect, mitigate and enhance" the Columbia River fishery.

All of this and more we would have to accomplish under tight deadlines prescribed by the Act. Those were times of perceived shortages of electricity, and the Act would dictate the nature of the region's response. By 1985, we were to have all provisions of the law in operation. Congress was confident that BPA could do it. A few skeptics said "bureaucratic inertia" would forestall us.

As 1985 drew to a close, we observed the accomplishment of most of the objectives of the Act. I suspect the year expired with little public notice of how far we have come in so short a time. And that's all right. It means we have done our job; the machinery of the Act is running smoothly, delivering benefits.

The progress of the last five years is remarkable in view of the changes in our utility environment. The circumstances underlying the Act began shifting and quaking almost as soon as the law was set in place. The tremors of change grew violent, and some feared the regional planning scheme would crumble. The Act survived to deliver benefits only because Bonneville and the Council found ways to adapt its terms to today's energy world.

I don't need to recount the many changes we have seen. The biggest mistake any of us could make at this point would be to falter in the pursuit of efficiency. The Power Planning Council has adopted a policy of acquiring capability. It's a streetwise approach that works in a time of surplus, and will prepare the region to meet future needs.

As we finish [the first five years under the Act], so we begin. Many new challenges lie ahead as we seek to broaden the principles of regional cooperation embodied in the Act. Although the Act did not anticipate surpluses of energy, it helps the region to focus and plan as "one utility" in solving its resource problems. That's a principle that will help maintain loads and resources in trim, whether they tip to surplus or deficit.

Under the Act, our utility community established a new equilibrium — a balance of interests in the federal Columbia River power system. It has laid the groundwork for a new, more efficient way of doing business.

"The Act survived to deliver benefits only because Bonneville and the Council found ways to adapt its terms to today's energy world."
Peter Johnson

STERLING MUNRO was an aide to Senator Henry Jackson until he became administrator of the Bonneville Power Administration in 1978. He served as administrator of Bonneville until 1981. He is now a vice president and director of public power financing for the investment banking firm of John Nuveen, Inc.

When I became administrator in January 1978 there had been several proposals [of a bill] made by PNUCC and by others. Snohomish PUD had made some amendments. But, really, no legislative action had been taken. I don't think there was much optimism that there would be any action.

The first sign of action was when the Northwest senators reached agreement on a set of 12 principles. A key concept in this agreement was that Bonneville purchase authority was fundamental to leveraging the assets of the federal system. Another central principle was that the states of the region should have a role in shaping decisions that would be made. And there had to be some means of resolving disparity over rates. It was agreed that something be done to bless the residential and farm ratepayers.

Finally, we had a bill that was drafted by members of Congress, not by utilities.

Bonneville functioned in a legislative service capacity, providing objective analysis. Not everyone views it that way, of course. There was a considerable amount of competitiveness over the issues involved. We were, at the time, trying to continue what we viewed as some effective joint planning and decision making that had developed in the region among public and private utilities, different states and interests. We also hoped to expand and improve this kind of activity.

It was clear that the utilities themselves, while critically involved in the decision-making process, really could not be the only decision makers. It was important and desirable to get elected representation involved — not only in Congress but at state and local levels. Also, certain interest groups had become antagonistically involved; the region needed to have a mechanism for hearing them.

Utilities had proposed a decision-making council made up of utilities. I always thought that wasn't going to work. Just as war is too important to be left to the generals, these energy matters need civilian oversight. I did, however, support a structure that would give Bonneville a place on the Council. I liked that notion because I thought there was a risk otherwise that you might end up with separate, competing and conflicting interests. They might not work collegially and effectively to reach decisions for the good of all.

But everybody else thought of Bonneville as a 100-foot gorilla that ought to be kept in a titanium cage.

The structure arrived at in the Act was to keep the parties separate and apart, but forced to pay attention to each other—all of which has been in the process of evolvement, with varying degrees of success. Mostly success, though, I think.

The question becomes, how do you identify where the region wants to take itself? And, how do you get there? It's a grand notion. How it gets done is not that easily described — how a whole region looks upon itself, and makes collective judgments, and deals with individual ambitions. It happens—even if it's not all that predictable or organized.

Like any other entity composed of people, a lot depends upon the people—depends on what those human beings do. I think, by and large, the region's been well-served by the people who have had the responsibility [of serving on the Council]. We've been pretty lucky in those people. It seems to me they acted as individuals, with more independence than was expected when the Council was structured.

The framers of this Act came up with what I think is quite a remarkable instrument, and quite an accomplishment for the Northwest as a region. I'm not sure that it's widely enough appreciated that this Act is and can be a very effective set of mechanisms for good decisions. Other areas of the country should envy it. Maybe they do.

"Everybody else thought of Bonneville as a 100-foot gorilla that ought to be kept in a titanium cage."
Sterling Munro

MICHAEL BLUMM is a professor of law at Lewis and Clark Law School in Portland, Oregon, and editor of the Anadromous Fish Law Memo.

Fish and Wildlife Concerns

About a year before the Act was actually passed, I wrote an Anadromous Fish Law Memo on the fish and wildlife considerations in the pending legislation. I recall looking over some of the drafts on the House side and talking to some people who were back in Washington at the time trying to lobby various congressmen.

Senator [Frank] Church had put in a little blurb about fish at the last minute. I felt that that wasn't enough. There were some better ideas being floated around by Congressmen [Don] Bonker, [Jim] Weaver and the General Accounting Office. And Congressman [John] Dingell [Michigan] took this stuff pretty seriously.

There were late night and early morning conversations trying to line up people. There was one time when I was having a hard time trying to get through to someone to get some enforcement language in. By the time I finally got through to him, he said there just wasn't any way there was one word that was going to be changed. Of course, I feel the lack of enforcement language in the Act is one of the Achilles' heels of the legislation.

Section 4(h) 10 and 11 were never specific enough for me. We still don't know whether the Council's program is advisory or mandatory. The federal implementing agencies have different opinions.

"It seemed to me that whoever was appointed to this Council wasn't very likely to have much fish and wildlife expertise and would wonder what the heck they were doing with fish and wildlife. *But*, Dan Evans knew about fish, and he made a big difference."
Michael Blumm

I was worried too about the Council itself. It seemed to me that whoever was appointed to this Council wasn't very likely to have much fish and wildlife expertise and would wonder what the heck they were doing with fish and wildlife. *But,* Dan Evans knew about fish, and he made a big difference.

The fish and wildlife program is harder to do than the other stuff. It involves a lot of players; it's complicated; it's not as certain. If you put in a certain amount of conservation in a certain number of homes or commercial buildings or industries, you know you're going to get some returns. You don't know that in the fish and wildlife area. You've got to wait at least four years [the average life cycle of the salmon] and then "El Nino" can come along and screw up everything. So, it's just more uncertain, and it requires a kind of institutional

sophistication that people who think of themselves as "doers" have difficulty with, because they can't just do it.

When the Act came out and the Council asked for recommendations to form the program, I was concerned because I had wanted to see more specific standards in the Act that would curb the Council's discretion. They even had the discretion to reject recommendations. So, I was kind of leery of what was going to come out; it all depended on the program.

What I thought was astounding was that the recommendations that the tribes and agencies came up with were so comprehensive, so well thought out.

"I would suspect that sometime in the next decade or so, when some intractable problem confronts Congress or a number of states, somebody's going to look to the Pacific Northwest and see what an open process and shared decision making can do. Hopefully we'll have something to show."
Michael Blumm

The utility industry, even Bonneville, couldn't refute them. They were overwhelmed. And the Council, by and large, took those recommendations to form the basis for the program. Those 1981 recommendations have been the engine, a really critical part of the process ever since.

The Act really created a whole new institutional framework, not just by creating the Council, but also by coalescing the fish and wildlife interests around the Council, and making them better managers of the resource. Before the Act came out, the fisheries scene, at least institutionally, was chaos. The Bonneville Power Administration, until 1976, believed it didn't have any authority over fish issues. They said, "We just don't deal with fish."

So, every year the fish and wildlife agencies and tribes would go to the Corps of Engineers and ask for water for the spring migration—what we now call the water budget. They met around a negotiating table where the operators had all the control. The Corps could refuse requests, and not even explain the basis for the refusal. It was a closed process.

The creation of the Act and the Council turned that around. Not as much as I would have liked, I fault the Council for not being more serious about pushing the water budget, for example.

But, the Council has such an open process that even Bonneville just had to react to it. The decision-making doors have been pushed open in the region and lots of entities who didn't think they could influence decision makers, like the Indian tribes, have been relatively successful. Certainly far more successful than they ever were before.

But all the promises that were made haven't really been fulfilled yet. I think there's been a lot of good faith. But there's been an underestimation of the challenge of really changing river operations to produce a co-equal partnership. That really hasn't happened yet.

The one thing I fear now is the intertie. The intertie will make fish passage provisions more difficult. If we don't take care of ordering a certain amount of spills at various projects, those aren't going to be available after the intertie is upgraded and we've got the capacity to sell more power south.

"The Act really created a whole new institutional framework, not just by creating the Council, but also by coalescing the fish and wildlife interests around the Council, and making them better managers of the resource."
Michael Blumm

The Council has been much more effective than the old river basin commissions, which were also interstate bodies. I think the reason why is because the Council has some authority over the agencies—an admittedly uncertain amount. The river basin commissions were just advisory bodies and they just produced a lot of paper. The Council can do something. It *has* done something. It's written a plan and it's had some success with implementing that plan.

I think that what the Northwest has to show the rest of the country is a working model of how to deal with long-standing problems on a shared jurisdictional basis.

The Council wasn't given an easy chore, especially on the fish and wildlife side. I would suspect that sometime in the next decade or so, when some intractable problem confronts Congress or a number of states, somebody's going to look to the Pacific Northwest and see what an open process and shared decision making can do. Hopefully we'll have something to show.

BILL YALLUP is the chairman of the Fish and Wildlife Commission of the Yakima Indian Nation and a member of the Yakima Tribal Council. In 1980, when the Northwest Power Bill was before the U.S. Congress, Yallup represented Washington Indian tribes in legislative negotiations.

The Indian tribes were not too concerned about the power stuff in the Act. We said, "You can do what you want with the power, but we have our treaty rights here, and dam proposals have never taken into consideration those rights." The power bill language had to be careful so our treaty rights wouldn't be forgotten.

Then the Council was formed, and Dan Evans became chairman. He took some convincing—not a lot, but some—to make a model area for the fish and wildlife program. We suggested the Yakima River Basin. He took our idea and went further with it. Section 900 of the program [the section specifically addressing work to improve fish runs in the Yakima] was his answer.

You see, we don't have any hatcheries in the Yakima system, so it's pretty much wild stock here. Our problems were with irrigation canal dams. Thousands and thousands of our spring chinook ended up in the fields every year because there weren't screens on those dams.

We went to the Bonneville Power Administration and said, "We'll back everything you want on the power side, if you'll give us the money to correct the problems on the Yakima."

"If it weren't for the Act, we'd be back where we were in the 1970s. We're very thankful that the power people listened."
Bill Yallup

The tribes didn't think the money would be readily available, but already about half of the work in the Yakima River Basin is completed. In 1977 we counted only 50 salmon redds in the Yakima Basin. In 1985 there were upwards of 1,500. We are seeing the salmon return.

Now it's time to improve the large Columbia River dams. The bottom line overall is the water budget and minimum flows to provide water for the juvenile fish migration.

"It is time that the watershed must be protected."
Bill Yallup

If it weren't for the Act, we'd be back where we were in the 1970s. We're very thankful that the power people listened.

It's still a slow process. It's still a bothersome situation. The tribes still have to wonder whether Bonneville will continue to support the fish program, and whether Congress will continue to support implementation of it.

There are so many parts to the Act, but as long as our tribal rights are recognized, the program will be workable. The parts that are good, that work, we want to keep. The parts that are bad, that don't work, we want to get rid of forever.

When they built Bonneville Dam back in the 1930s, my grandfather went down with a delegation to meet with Franklin Delano Roosevelt. Roosevelt assured my grandfather that Bonneville Dam would be the last dam. The tribe said, "Okay, build it, but make sure there are fish ladders and protection for our runs." Sure enough, the other dams went in up the river. The fish weren't protected.

We realize electric power is important, but when people came here in wagons there was no electric power. They didn't need this power. Sure, we need it now, but we need our fish, too. It is time that the watershed must be protected.

BILL WILKERSON, is director of the Washington Department of Fisheries. In 1980, he was active in negotiations to add fish and wildlife protection language to the Northwest power bill.

To give you an example of the way the power bill was worked in D.C., I was called one night, at about 6 p.m. Pacific time, to be at a meeting with Congressman John Dingell at 8:30 a.m. East Coast time. Thinking I'd only be gone for a meeting, I took my briefcase and caught the "red eye" that night. I ended up staying three weeks. My client had to outfit me. I hadn't even a change of clothes. The demands on people working this bill were like that.

The power interests involved in negotiations on the power bill hired me as a mediator for two reasons: they knew Congressman Dingell wanted fish and wildlife protection in the legislation, and they lacked background in all the complex details of fish management and fisheries negotiation. They couldn't talk knowledgeably to the fisheries people themselves, and they felt I could.

"The Act is the strongest law that exists regarding the Columbia River fisheries."
Bill Wilkerson

My goal as a lawyer was to bring fisheries up to equal partnership with power interests in the region. The Columbia River salmon losses were enormous. The fish and wildlife interests were in desperate need of authority to protect the resource. It was important to give the Power Planning Council that authority.

The Northwest Power Act was a clear statement from Congress that "enough is enough." The Columbia River runs had been largely ignored for years. The Power Act broadened the responsibility of the power interests, of the Bonneville Power Administration, the Army Corps of Engineers, the Bureau of Reclamation and others to consider the basin's fish and wildlife when they make their decisions. The Act strengthened the fisheries. The Act is the strongest law that exists regarding the Columbia River fisheries.

The Council was most effective when it pushed us all into cooperation. The fish and wildlife agencies and the tribes reached a consensus on more than 95 percent of the recommendations that were incorporated into the Columbia River Basin Fish and Wildlife Program, thanks to the Power Planning Council. The Council cajoled fish and power interests into reaching agreement. It helped all of us organize and design a program.

I think the Council remains effective, but would be more effective if it assumed the role it had of bringing people to the table and beating their heads until agreement was reached. Who better is there to facilitate this than the representatives of the four states? The law gives them plenty of authority, but they haven't been as aggressive since the program was finished.

"Getting people to see that the laws have changed, that they can't keep doing things the way they always did, is hard work."
Bill Wilkerson

The only real negative I'd articulate is that the implementation is a bit slower than many of us had hoped it would be. That's not entirely the Council's fault. Getting people to see that the laws have changed, that they can't keep doing things the way they always did, is hard work. There is so much contentiousness among the various interests. Everything is still a debate. If there are going to be fish for anyone—the fisheries, the power people, or anyone else—there will have to be cooperation on *everyone's* part.

I'm concerned about apparent power struggles in the region. Congress set the requirement that we work these things out. We need everyone's commitment to make this work. We need the Corps and Bonneville, too. We've proven we're stronger if we pull together.

BILL BAKKE is executive director of Oregon Trout, a statewide conservation group made up primarily of salmon and steelhead anglers.

I find it astonishing that no accurate account of salmon and steelhead losses exists for the Columbia Basin. By not knowing what we have lost, it is easier to lose it all.

The Council's fish and wildlife program is the largest wildlife restoration program in the world, yet the local media have failed to cover it and, as a consequence, the public is unaware of its value. This is a problem. It is a problem because special interests can capture the program, steering the investment of $750 million to serve their purposes.

The traditional solution to salmon and steelhead problems on the Columbia has been to produce more and more fish in hatcheries, at greater and greater expense. The Council's fish program is not a single solution program. It is broad based, it is aimed at true fish restoration through habitat improvement, adult and juvenile protection, and agency cooperation.

There is too much emphasis on harvest by the agencies. They have lost sight of their mission as resource managers. Good resource management nurtures the resource; it is concerned with the long-term health of the fish runs. The numbers will take care of themselves if we manage for the long-term persistence of the runs.

But somewhere along the road we have come to rely on hatcheries as the source of fish, and we think of management as producing more fish for harvest. The first priority is rebuilding the health of the resource base, and harvest is a byproduct of management, not its goal.

"Good resource management nurtures the resource; it is concerned with the long-term health of the fish runs."
Bill Bakke

Recovering a salmon run seems easy, and it would be, except for the fierce provincial politics of fisheries. There is a strong bias among managers to serve the harvesters rather than the reproductive needs of the salmon resource. The states and federal governments have traded the salmon off to grow apples, to overcut the watersheds, to produce energy. Each agency fulfills its mission as if it were unconnected to anything else. This has caused a once rich and bountiful ecosystem to collapse.

The traditional answer to this crisis is to abandon the rivers and invest in technology. But it hasn't worked, and it won't work because the true solution is not technological; it is social. We know what needs to be done to rebuild the salmon runs; it's just that we lack the will to do it in the way that it must be done.

"Recovering a salmon run seems easy and it would be, except for the fierce provincial politics of fisheries."
Bill Bakke

The Council's fish and wildlife program is the last opportunity we have to stem the destruction of anadromous and resident fish in the Columbia Basin caused by hydropower dams. If the Council fails to adopt a biological objective while striving to achieve a numerical goal to recover losses, we will have lost the best opportunity ever given us to restore a diverse resource and fall far short of expectations.

The Council's fish and wildlife program is imaginative and unique because it is focused on the natural resource. The priority given to system-wide planning and wild stocks of salmon and steelhead is a responsible and defensible position. I believe that the Council recognizes that these priorities will result in real restorative gains for the fish resources of the basin.

The Council's program to restore salmon and steelhead runs on the Columbia will work and it will give us long-term benefits that can be relied on. The Council is working from an ecological perspective which stands in sharp contrast to historical salmon management that views salmon as a product, a crop, and relies on the hatchery to fix a broken ecosystem.

Congress made a mistake giving BPA control over the fish program funding. That control has slowed progress and gives ultimate power to the big fox over the barnyard.

TIMOTHY WAPATO is executive director of the Columbia River Inter-Tribal Fish Commission, which represents the Yakima Indian Nation, the Umatilla Indian Tribes, the Warm Springs and the Nez Perce.

When the Northwest Power Act was being considered, the tribes took the position that there had to be strong fish protection language in the Act. We saw the Act as a way to systematically address problems, particularly salmon problems, that were caused by the construction and operation of the dams. There have been a number of acts that deal with certain aspects or specific problems with fish and wildlife, but there was nothing that dealt with the whole thing in a systematic manner. That was what we saw as the opportunity in the Act—if the language was proper.

The tribes—the Yakimas, the Umatillas, the Warm Springs and the Nez Perce—succeeded in getting language in the Act that, in some cases, was more stringent than the fish and wildlife agencies wanted.

The degree of cooperation and communication that you see now between the tribes and the states, you would never have seen in 1979. The directors of the state fisheries agencies would not be in the same room with the tribes. It was a continuous battle.

Once the Act was passed, the agencies and tribes worked through an ad hoc committee to come up with the recommendations that were submitted to the Power Planning Council, that then became the fish and wildlife program. There was no coordinating body that included both the agencies and the tribes, so we just formed that ad hoc committee.

"The degree of cooperation and communication that you see now between the tribes and the states, you would never have seen in 1979."
Timothy Wapato

The tribes had, once again, more stringent recommendations in many cases than the states did. The tribes are property owners of that salmon resource. They own half the resource, so they take a stronger position than others might who have other priorities. The tribes take what might be called a "hard nosed" position because we just won't compromise our treaty rights.

In the first go around the Council was still struggling for its own identity. It had really no set way of looking at the problems. Of course there were some strong personalities on the Council then. Evans was the chairman and he ran things with quite a tight fist.

Then we saw somewhat of a lessening of emphasis on the fish—I don't know if there's a lessening of commitment—but more and more attention is being paid to the power side. From the tribal standpoint, we are still urging the Council to be equally as strong on the fish side as on the power side. We see part of our role as urging the Council to maintain its total responsibility. It would be too easy for the Council to water down these issues to the lowest common denominator. We won't let that happen. We just live down the street.

But, I think the Council is doing pretty well. I think with this new amendment process [see page 39] we should give as few and as specific amendments as possible, not a shopping list of things. We were basically very happy with the original program—but we knew it had to be amended, and it was. We are probably the strongest supporters and advocates of the Power Council in this process. We have been from the start.

We're looking now at the losses and goals work. I think we'll probably have some disputes over losses, and we'll almost certainly have some disputes over goals. The tribes probably hold a lot of trump cards when it comes to that, because the tribes are the owners of that resource. State and federal agencies

are only managers of their 50 percent. They've already indicated a willingness to trade theirs off for other resources like power or irrigation. The tribes aren't going to trade theirs off. They've already lost too much.

"From the tribal standpoint, we are still urging the Council to be equally as strong on the fish side as on the power side."
Timothy Wapato

We're at the stage now where we really have to start implementing the Act. It's five years since the signing, four years since the Council was set up, three years since the first program was written. It's time to stop dragging our feet and get down to implementing it. It's true it's a new game for everyone, and we have had some showcase projects going, but they are just showcases. It's time to get some real work underway.

The whole climate has changed dramatically. There's much more cooperation, much more working together. Now we need to focus it and get some things done.

PAT GRAHAM, at the time the Northwest Power Act was passed, was project leader for the Montana Department of Fish, Wildlife and Parks Flathead River Basin Study. He has, since that time, directed Montana's implementation of the Council's fish and wildlife program.

The Northwest Power Act sure brought everyone together. We [Montana Department of Fish, Wildlife and Parks] put together a cooperative effort [to develop recommendations for the fish and wildlife program] with the Confederated Salish and Kootenai Tribes, the Fish and Wildlife Service and all the operators of the dams in Montana. It was a mammoth task. We started from ground zero. But there was a commitment to produce a comprehensive document.

There was a real spirit, a chance, an opportunity. We've seen here a real effort to identify ways to develop solutions to problems. The job is not complete, obviously, but it has already been successful. The biggest challenge now may be to maintain the quality of people involved and the level of enthusiasm and commitment.

"It's important the Council not pit states against each other."
Pat Graham

The success of the Council is that the members represent not just their own states, but the region as a whole. We [Montana] participate in a *regional* restoration program. I hope people appreciate this effort to balance the needs of the region. It's important the Council not pit states against each other.

Thanks to the Council, the public is recognizing what the true costs of power are. It's time to balance our energy appetites against the loss of fish and wildlife.

Conservation's Vote

RALPH CAVANAGH is the senior staff attorney for the Natural Resources Defense Council (NRDC). NRDC is a national nonprofit environmental organization with more than 52,000 members and contributors.

Our major concern about the Act, and the reason that we did not support it, in the final analysis, was that it looked like it contained the prospect for a complete bail-out of the Washington nuclear units 4 and 5. Which, incidently, was anticipated by the Washington Public Power Supply System and was one of the reasons why they liked the Act. I think no one was more surprised than they were when the bail-out didn't materialize.

In the final analysis, of course, the Northwest Power Planning Council determined the region didn't need any more coal or nuclear plants. Hindsight shows that our concerns have been made moot because the Council has proved to be an independent executive board for regional power planning. In retrospect, I'm more than happy to admit that I'm glad the Act passed.

There were many good things about the Act. For example, it is useful to have express statutory authority for the Bonneville Power Administration to invest in electrical energy conservation and small-scale renewable resources. That was something which Bonneville, at least, claimed a lack of authority to do, and it was paralyzing utility investment in conservation throughout the Northwest region.

"In retrospect, I'm more than happy to admit that I'm glad the Act passed."
Ralph Cavanagh

I think the most important issues over the next five-to-ten years are going to involve interregional power transfers. That means the transmission system between the Northwest and the regions surrounding it; the relationship between Northwest utilities and the utilities surrounding the region in Canada, California and points east. I think the Council is going to have to become involved in that process much more extensively than it has in the past. And I am encouraged by the Council's proposed West Coast Energy Study in the draft plan.

But there are many contexts that the Council has been wary about, that it is going to have to accept as its normal business. For example, one of those is the conditions governing access to the intertie to move power in and out of the region. That access has become a more important source of leverage, in terms of resource development in the Northwest, than the guaranteed purchase authority Bonneville has on the resource development side under the Northwest Power Act.

If the Council ignores the terms and conditions under which resources are developed for export, or if the Council somehow takes the view that that's not its proper concern, then there's the danger that the Council could become increasingly irrelevant from the standpoint of guiding resource development in the region. I unabashedly take the view that the Council should have a very important role in that development.

"I think that the Northwest Electric Power & Conservation Plan is acknowledged as an international model for least-cost power planning and for regional planning."
Ralph Cavanagh

I think that the Northwest Electric Power and Conservation Plan is acknowledged as an international model for least-cost power planning and for regional planning. In the electric power business, both of those are crucial new concepts. The least-cost notion means evaluating all resource alternatives, including conservation, on a level playing field and using the cheapest first.

The regional notion, which the rest of the country hasn't caught up with yet, but I think soon will, is that if you look at how power managing utilities are organized as power marketers across state lines, state boundaries are really obsolete. Planners and regulators have to catch on to that idea.

There are some utilities that take the view that the plan is out there, it's interesting, it looks nice on a shelf, and it need not necessarily have anything

whatever to do with what actually happens in the Northwest. That is an attitude that I can't understand and that I don't agree with. Obviously, I will think the Council is a consummate failure if that attitude prevails. But I don't expect it to, and we're making every effort to see to it that it doesn't.

No one, least of all me, would claim that there haven't been problems over the past five years. There is no question that the biggest disappointment has been the failure to get the model conservation standards adopted on time. I see that as a real tragedy. Obviously we're all trying to do the best we can, but as of January 1, 1986, we didn't meet one of the most important deadlines that the Council ever set.

JIM BLOMQUIST worked for the Sierra Club during legislation of the Act. He spent 27 weeks of 1980 in Washington, D.C. "For a while," he says, "I was the only lobbyist on behalf of non-utility and non-government interests." He is now the Sierra Club's Northwest representative.

We learned something about how the political process worked when Congress was amending the Transmission Act in 1974. When we tried to include conservation provisions we were told to forget it, the skids were greased. It was clear Bonneville was the group everyone was listening to. There was no independent judgment by Congress. The attitude was, "Bonneville has always provided energy, the energy is cheap, so let's do what they say."

In 1976 everyone was talking about how there had to be a new purchasing arrangement [for new resources]. We saw a real opportunity to make conservation a part of any legislation.

Sierra Club and several Northwest environmental groups convened a meeting to figure out what we wanted. One of the people there was a fellow who had been a lobbyist for the Oregon Environmental Council—Roy Hemmingway. We determined that cost effectiveness should be the test of new resources, and that there should be a regional council and a 30-year plan.

As the year went on, Bonneville moved ahead and held secret regional meetings to draft a bill—secret in that they were not known about or open to the public. It was our impression that Bonneville's involvement in legislation had to be approved by the U.S. Office of Management and Budget, and that the meetings had to be open. We wrote letters and those meetings became open. A whole series of public drafting meetings followed.

When the bill went before the House Committee on Water and Power, it was our impression that it was still a bill to buy thermal power. We also believed that it violated all the antitrust laws of the United States and that it placed planning in the hands of a privileged group of people. Frankly, it was an awful piece of legislation, and an embarrassment to the Northwest congressional delegation. We stopped that bill dead in the committee.

The utilities tried to resurrect it, but utility involvement had tainted the product. Sterling Munro then became head of Bonneville, and he had one set of marching orders from Senator Henry Jackson: to produce a piece of legislation. He worked semi-publicly and quite a bit privately.

We worked for the next several years in Congress to fight that bill. Its major flaws are there to this day, and they are time bombs, waiting to explode. The worst provisions, and the ones I would still like to see amended, are the purchase guarantees for power plants, and the rate pool structures.

Purchase guarantees protect utilities from the risks of building new facilities—but risk is a way of ensuring that people take their projects seriously, that they exercise due control to keep costs down.

As for the rate pools, they do nothing to encourage conservation. Power is sold at a melded rate, averaging the costs of all the different resources. The only real incentive to conserve energy is for rates to reflect the true cost of producing power.

We proposed separate rate pools for federal hydropower and for new thermal resources. Every utility would get an allocation of the cheap hydropower. But if they weren't aggressive in conserving energy, and they exceeded their hydro allocation, they would have to buy from the more expensive thermal pool.

The last five years have produced many of the intended benefits of the Act —not because the Act produced them, but because the times did. The collapse of WPPSS [nuclear projects] and the collapse of load growth created a conservation trend based on skyrocketing rates. But the law didn't create this trend, it resulted from economics and the poor activities and management of the utilities over the years.

People expected the Council to be a positive leadership force in the region. But over the last couple of years I've seen a return to Bonneville calling the shots. Public concern about energy planning has diminished, and the Council is getting to be more of an insiders' game. The people who want Bonneville to purchase WPPSS plants that will never operate are in the driver's seat—not the public.

It's a tough game to keep up with. And I don't think it's a fair game. Public interest groups are outnumbered and outspent. The total budget for the Northwest Conservation Act Coalition probably doesn't represent the retainer for Pacific Power and Light's attorney.

If we can't put a new birth of public enthusiasm back into the process, I think we should consider intervenor funding, or some other method to reach groups and make sure both sides have equal access to resources.

A great frustration is that Bonneville and the Council have headed more and more toward making the issues complex and obscure. The central issue they should ask the public about is, should Bonneville have energy conservation programs or thermal generation.

We need to recognize that people are not experts, but people are in charge of this country. We need to design decisions around people.

Look at the level and extent of activity it has taken to get mediocre model conservation standards. Look at the debates over whether or not we should implement rate penalties for political subdivisions that don't pass codes. There's been a lot of retreat in that area. And there's been a real backpedaling from renewable resources other than hydropower.

People on the Council have to be leaders, aggressive politicians. You have to blaze an energy trail for the region. When you have a surplus the need doesn't seem so clear. But you don't wait until you need a sandwich to start growing wheat.

"We need to recognize that people are not experts, but people are in charge of this country. We need to design decisions around people."
Jim Blomquist

The Utilities' Under-standing

KEN BILLINGTON is a former executive director of the Washington Public Utility Districts Association; he was active in developing the consensus that created the Northwest Power Act. Billington is now retired and writing a book about his life in public power.

We knew we had to stay out of hopeless fights if we were going to meet the people's need for electricity. And everything we looked at said we'd have power shortages in the 1980s.

The direct service industries were getting their termination notices, and 85 percent of them were in public power territories. They were going to come knocking on our doors. We were all tied to the regional grid—it was obvious to most of us that if one customer was short, all were going to be short.

It just seemed to a lot of us—public and private utilities, industries and so forth—that there had to be a means of melding all the regional power efforts into a regional power supply. We saw the possibilities of saving energy in Washington that could be used in Idaho. We saw the federal dams and transmission systems as a potentially tremendous asset to underwrite financing for new steam plants. We recognized the benefits, but had no way of putting it together.

"We had to stop fighting between states, between public and private utilities, between utilities and industry. We had to avoid letting those old power wars get started again."
Ken Billington

Hence, the first versions of the Regional Power Act.

The publics thought it would be all right for the investor-owned utilities to share in low-cost federal power if they didn't impinge on the preference clause [see box, page 28], or seriously affect the cost or amount of power available.

PNUCC put together the first version of the bill, in 1976. That set off some severe arguments. Snohomish [County PUD] said it violated preference—that the preference rate pools weren't large enough, for one thing. That issue split the parties and delayed us.

In December 1976 about 18 utilities met in Spokane with [then U.S. Senator from Washington, Henry] "Scoop" Jackson. He said, "We've gotta settle this thing down. We'll be torn apart by factors outside of ourselves." So every time there'd be a squabble about something or other, some family fight, we knew we had to keep moving ahead or we'd run out of power. We had to stop the fighting between states, between public and private utilities, between utilities and industry. We had to avoid letting those old power wars get started again.

In the middle of the legislative process you had the fomenting of the WPPSS problems. Inflation and the increase in construction costs were producing scary numbers.

Questioning the Supply System brought forth public awareness that there should be greater public involvement in power industry matters. State governments and other groups started to get into the act. Quite a few interest groups too... bless 'em—as a onetime public power activist, I can understand 'em. Conservation outfits. Fish people. Environmentalists. Ratepayers. A local government study group that wondered who was going to pay for enforcing building codes. All of these voices started to get into the congressional legislation.

This kind of clamor made it clear that the region had to have a stronger type of planning arrangement which would be of a non-utility nature. The issue of greater state control came up, and it moved gradually toward equal representation among the states.

I had to like the movement toward decisions by the people for the good of the people. And I pushed hard for having this positive Northwest voice to plan and administrate Bonneville activity. But, you know, responsibility for the power supply still rests with the utilities. If the lights go out, the customers aren't going to call you folks at the Power Planning Council. And you have to be careful of shifting the situation so there's responsibility in the utilities' hands and authority in the Council's hands.

CHIP GREENING is a Portland, Oregon attorney. At the time the Power Act was being lobbied he was the manager of the Public Power Council.

The amendments we proposed to S.B. 885 were intended to make sure that preference rights for the public power companies were protected. I think if we had waited one more year, the problems would have taken care of themselves and we wouldn't have needed legislation. If the process had dragged on one more year, two things would have occurred: the extent of the surplus would have become known, and the increase in WPPSS costs would have been factored into Bonneville's rates. That would have meant that the rates of the publicly owned utilities would go up and there would have been no more pressure from the investor-owned utilities because of the retail rate disparity.

Those two factors would have eliminated the coalition for a bill. Planning was an important part of the bill, but no one would have passed a bill just to do better planning.

A lot of concerns about the planning and fish and wildlife issues would have happened anyway because the utility world was changing. The utilities could no longer ride roughshod over the public interest.

"Planning was an important part of the bill, but no one would have passed a bill just to do better planning."
Chip Greening

Under early leadership, the Council got into an anti-utility frame of mind which has in recent years turned around. The Council now seems to be listening to the utility industry because the utilities are acting in the best interests of their customers.

Some public interest groups are slow to pick up on the fact that the utilities do not want to build coal plants, nor do they want to spend a lot of money on power generation. The utilities and the Council are slowly coming to realize that they have a lot in common.

When the legislation was being lobbied, one legislator said there was more lobbying on the Regional Act than there was on the Alaska Pipeline. There were so many intensely-held views and interests from one small section of the country.

There was no real benefit to public power from the Act. The investor-owned utilities are sucking hundreds of millions of dollars out of the Bonneville coffer. The direct service industries got a special rate deal. But public power can't point to anything it got from the Act.

JIM BOLDT is executive director of the Washington Public Utility Districts Association.

I joined in resolutions supporting early concepts of the bill. But there were those of us who opposed it because they feared it would break preference. They felt it would be the camel's nose under the tent. Allow that, and pretty soon you've got the whole camel in your lap.

I was concerned at the time about how the Council staff would grow, and how their role in the Act would increase. I saw the utilities' domain and prominence in power planning leaving. I really lost my respect for the concept of the regional power council when the deal was cut for two members from each state—giving Montana equal weight with Washington, and so forth. That cooled me down on it personally and concerned a lot of our members.

But [Council Executive Director] Ed Sheets has put together an exceptional group of people—although they want to keep decisions too close to home. Still, the Council has been able to balance its decisions and handle issues intelligently. I've been pleasantly surprised.

It's these personalities on the Council that have allowed it to work as well as it has. But now the veterans are leaving the Council and we're entering a second era.

The only disappointment I have with the Council is the mixed signals it keeps sending on the model conservation standards. That waffling has cost the Council in its relationship with at least part of the utility industry. I think it could have been handled more carefully. Instead, we keep hearing, "Yes, there's a surcharge. Wait a minute. No surcharge. Well, maybe in 1986. No—we'll do it in '89. Go beat up the legislature now and get a code. There's no indoor air quality problem. Okay, there *is* an indoor air quality problem."

The best thing about the Act has to be the fish and wildlife part. That has to be number one. I am so proud to have been party in any little way to helping protect this resource for future generations.

The greatest disappointment is the failure of conservation. Conservation has simply lost its horsepower. We have failed to convince ourselves that it is a resource. We have failed to sell it—even though we have the ambition to sell other resources.

I like the Council's outreach—the way they're getting involved in the intertie and talking with other regions. They weren't timid. They went out and got what they needed to put the plan together.

Preference, exchange and DRPA: Some Crucial Definitions

"Preference was and is the root of the [rate] disparity in the Northwest." — Bill Robertson

The terms "preference" and "exchange" are mentioned by many of the people quoted in this issue of *Northwest Energy News*. Both concepts have to do with the statutory right of utilities to purchase electrical energy from the Bonneville Power Administration. This electricity has a relatively low price because most of it comes from hydropower generated at dams built decades ago. The price was extremely low up until 1979, when the Washington Public Power Supply System nuclear plants were included in Bonneville's rates.

There are two kinds of preference in Bonneville's charter: the superior right of public utilities to obtain Bonneville's hydropower; and the regional preference that gives investor-owned utilities in the Northwest the opportunity to buy the power before it is offered to out-of-region customers.

When Bonneville did not renew investor-owned utility energy contracts in 1973, because it expected a shortage of electricity by 1983, investor-owned utilities believed they could no longer count on firm access to the cheap federal power. The investor-owned utilities began building their own generating resources — mostly coal and nuclear plants. Electricity from these new developments cost far more than the federal hydropower. Rates from investor-owned utilities climbed to double those of public utilities.

"Roy Hemmingway and Company were running around, and DRPA was threatening." —John Frewing

The State of Oregon, served primarily by investor-owned utilities, responded by forming a new public agency which, in essence, was intended to turn the entire state into a public utility district. The Domestic and Rural Power Authority (DRPA) would have purchased preference power from Bonneville and brokered it to the operating utilities for distribution to residential and farm ratepayers.

The exchange provisions of the Northwest Power Act were intended to restore rate parity for residential and small farm customers of the investor-owned utilities. These provisions permit Bonneville to buy electricity from those utilities at the average system cost of generating it (a cost based on the total expenses incurred by the company).

In turn, the investor-owned utilities can buy Bonneville's low-cost electricity at the same rate as public utilities. Most of the dollar difference of this arrangement was to be paid by the direct service industries (primarily aluminum companies) — who agreed to the arrangement, according to most sources, because they sorely wanted the long-term contracts and reliable energy supply that the Act would guarantee them.

Not all parties express satisfaction with the way the exchange is working. In 1984, largely in response to direct service industry complaints, Bonneville disallowed certain expenses claimed by the investor-owned utilities in computing their average system cost. This decision lowered the price Bonneville has to pay investor-owned utilities for electricity—and raised investor-owned utility rates.

Only three investor-owned utilities now participate in the exchange: Portland General Electric, Pacific Power and Light, and Utah Power and Light (in Idaho).

JOHN FREWING is manager for electrical business planning at Portland General Electric. During passage of the Act he was a policy analyst for PGE.

I can remember reading the Act for the first time on a very hot and sunny day, reclining on a lawn lounger in my back yard. It took a hell of a long time to read and I got quite a sunburn doing it.

I put together a study of PGE's perspective on the Regional Power Act. We concluded that a lot of things were left unsaid in the Act — left to later fights. In particular, the 7(f) [new resources] rates and the power exchange provisions were open to much interpretation.

Another thing that caught my eye in 1980 that hasn't yet been tested was the idea of quantifiable environmental costs. There's been no test because there's been no large central station acquisition since the Act was passed.

PGE had three interests in the Act: (1) rate matters; (2) sharing the risk in constructing new plants; (3) keeping open opportunities for expansion of our business.

How did our hopes turn out? We're not in agreement with Bonneville's determination of our average system cost in calculating exchange rates. But nobody's ever happy with those kinds of decisions. On the whole, the Act has certainly helped our rates.

Unfortunately, while the Act offered rate benefits to residential and small farm customers, it did not help the existing commercial and industrial customers of investor-owned utilities. At the margin [where profitability becomes an issue], rates can influence decisions by those companies to stay or go.

With regard to construction of plants — it hasn't come into play yet. And the Act was pretty vague on how that was going to be done. The Act creates no guarantees and no strong motivations to keep 7(f) [new resources] rates low. The [Council's] plan recognizes that this problem has to be fixed.

Investor-owned utilities would probably be more likely to sign up with Bonneville requirements if those rates were low and there were some evidence of long-term stability.

As for keeping open opportunities — there have been many opportunities opened in conservation. But this sector is outside the regulated utility industry and doesn't fall under the Act. Conservation is really a consumer-based energy business — self-generation, load management, efficient motors, energy controls, insulation. We don't have a lot of cogeneration yet in the Northwest, but that's coming too. It's driven by economics.

"A lot of things were left unsaid in the Act—left to later fights."
John Frewing

What's emerging is that the Council may have more power in fish and wildlife than in power planning. Bonneville has appeal procedures for going around the power plan. They don't have those — if you will — escape clauses in the fish and wildlife area. Those provisions affect not only rates, but the availability of power. I believe the fish and wildlife issue may also have stimulated more interest in alternative sources of energy [which have less environmental impact].

The Act created better mechanisms for consultation, which can permit us to come up with better results. The Council also provides a place where independent and credible analysis can be done to justify some tough decisions — about the WPPSS nuclear plants, for instance. The power plan showed there was other energy available and allowed the region to change its mind on those plants.

At first, the Council needed to advise a small, well-defined number of actors. But now, decentralization and deregulation are going to grow in this business. There's no reason there shouldn't be a wide variety of actors in the marketplace for electrical generation, with more opportunity for competition. The Council ought to encourage, in its own way, that sort of change. More competition will benefit the consumer through lower rates, and the utilities and consumers both through more stable rates.

JASON KING is director of government relations for Puget Sound Power & Light — the only investor-owned utility that buys power from Bonneville. During passage of the Act, King was manager of federal government affairs for Puget.

The major issue of importance to Puget [during legislation of the Act] was rate parity for our residential and small farm customers. We were seeking cheaper power. We also wanted a regional cooperative effort in conservation. We had already been working in that area and saw its value.

The Act is still cogent and correct in its priorities — in particular because of the high priority given conservation among the resources.

However, parity of rates simply isn't there for our residential and small farm customers. Whatever benefits they might have enjoyed through the Act have been largely lost due to Bonneville's recent unilateral decision [to disallow certain categories of investor-owned utilities expense] in figuring average system cost. This has been a serious disappointment to us because we considered these benefits to our customers a cornerstone of the Act.

A lot of us tend to think about that period [working the Act through Congress] with nostalgia. It was a great experience to have those close working relationships and a shared full time commitment. It became our lives in Washington, D.C. Many of us literally lived back there and commuted in this direction. There was a great deal of camaraderie among the separate interests. I count myself quite fortunate to have been involved with so many capable people. And, of course, it became a highly satisfying accomplishment, working a bill through Congress.

There was a great commonality of interest in getting a bill passed. We were able to diminish the differences between us and concentrate on a common cause.

The direct service industries wanted long-term contracts assured. The public utilities wanted to avoid the adverse consequences of receiving all the cheap preference power. They feared the likely challenge to the exclusive benefits they had been receiving from the federal system. The majority of the residential and small farm customers in the Northwest were not receiving those benefits.

Meanwhile, the private utilities wanted to get access to cheap federal power. The need for conservation was widely recognized. All those things played together to consolidate the separate and sometimes warring factions. And, of course, there was a political consensus in the region over the need for regional planning and regional conservation.

DRPA [see box, page 28] was basically a ploy by the State of Oregon to force some legislation as a remedy that would open up the federal system to private utilities — so some of those benefits would be spread around. I think it was generally acknowledged as such at the time. It helped motivate the eventual effort to pass the Act.

"We were able to diminish the differences between us and concentrate on a common cause."
Jason King

The cooperative origins of the Act should be a cornerstone for the regional plan. We need to work not for what this or that person wants or needs, but toward decisions which serve the region best. Our efforts should focus on commonality of interests rather than on what separates us. I think we've lost a lot of that spirit along the way. Holding together regional cooperative efforts is a crucial challenge now for the Planning Council and all the separate interests.

There are certainly a tremendous number of challenges left in front of us. Circumstances have changed drastically since the Act became law. The situation is now separate and distinct from what we thought we were working on. The supply has altered with regard to the WPPSS resources we expected; there's less demand than we anticipated then; we've seen lower projections recently regarding the amount of hydropower we thought would be available.

We still must emphasize programs to seek out and implement conservation everywhere it can be found in the region.

BILL ROBERTSON is vice president of strategic planning, government affairs and communications, Pacific Power and Light. During passage of the Act, he was administrative assistant to Al Ullman, congressman from Oregon.

This legislation had no natural advocate in Congress. Of course, no one could really be disinterested either, because it was a bill that created lots of controversy. For a chunk of time, Al Ullman pulled the duty of keeping the troops together. People were sort of camped out in his office for three years. His office helped keep the bill alive. It was pretty much my job to manage the effort — work with the other staffs. I saw more of some of those regional energy guys for a while than I did of my wife.

The Act had a fairly narrow set of purposes. The fundamental idea was that we were going to need more resources — based on ten years of history and growth. The guts of the problem was the preference clause [see box, page 28]. The private utilities had been cut off from firm power in the early '70s and suddenly had to build their own resources to meet their needs. Trojan [nuclear plant in Oregon] was built for half a billion, if you can believe it. Pacific Power and Light went with coal in Wyoming and Centralia. More and more new thermal development got reflected in private power rates.

Even though Northwest investor-owned utilities' rates, at 3 cents per kilowatt-hour, were lower than what 95 percent of the country paid, they were double those of the Northwest public utilities.

Folks in investor-owned utilities' territories in Oregon looked across the river at Clark County and its 1½ cents, and asked, "What hath preference wrought?"

DRPA [Domestic and Rural Power Authority — see box, page 28] would have provided a shell public entity to give the people of Oregon access to preference power. But DRPA or other public takeovers would have thrown an impossible weight on the federal system. They would have destroyed its advantages. The hydro string had just about run out. Preference loads were up to about what the public utilities could handle.

It was really very difficult for anybody to plan. If you're Pacific Power and Light, and you don't know if you'll have a market for your electricity [because of takeover elections and structures such as DRPA], would you plan to go ahead with half a billion or a billion dollars worth of resource investment? The answer is no.

"Preference was and is the root of the disparity in the Northwest."
Bill Robertson

The public utilities and Bonneville had the same problem. And the industries didn't know if there would be any service, if no one would build. So each group was ready to make some concessions that would at least reduce some of the pressure.

This problem was horribly hard to explain to the rest of the U.S. There is nothing anywhere else in the country akin to the collection of public utility districts we have out here. The other congressmen only saw that we were worrying about rate disparities when the highest rate was lower than almost anything else in the country. What's not completely understood elsewhere is the extent to which this region depends on electricity for its economy.

The message from the [congressional] leadership was "You gotta sort it out before we go in. We can't sort our dirty wash in front of a 45-person committee that has only one person from the Northwest on it. It's gonna be hard enough defending the fort — let alone building it." Well, we did more building than was probably safe.

The greatest difficulty was getting anyone to speak for public power as a group. They have so many different configurations and situations. They worried about different things. The big question, of course, was "Doesn't this diminish preference?" Well... it certainly adds something to it.

Preference was and is the root of the disparity in the Northwest. Private utilities and their customers felt that they were doing the work, taking the risks, and they ought to

be getting the benefit of the system their tax dollars were paying for.

Pacific Power and Light had put together regional joint ventures, they were running weatherization programs, and their customers were using about 11,000 kilowatt-hours per year. Meanwhile, up in Washington, where they have the bulk of the public utilities, everyone was fat and happy. In Snohomish [County PUD] the same class of customer used 23,000 kilowatt-hours a year. They're saying "We've got all we need in the federal system. Solve your own problems."

Hanging on to preference in the face of larger regional needs is an abuse of preference. Something I call the "Pig Rule" applies: If you make a little piggy of yourself, someone will make sausage out of you.

The exchange is a big step forward — or actually, two forward. The average system cost decision was one step back. Once again we have a disparity because of, in my view, capricious decisions by Bonneville about what they would count as costs [in figuring the exchange rate]. They had a couple of legitimate complaints, but their decision went far beyond that.

But I can't imagine that the region would have gone about dealing with its problems as well as it did, or as quickly, if we didn't have this mechanism [the Act] for rationalizing the process. Would any of the agencies be spending as much money on conservation? I doubt it. With all the separate interests involved, I don't see how we would have concluded anything about the WPPSS nuclear plants. And if the direct service industries couldn't get power they would have had to leave. Bonneville couldn't have sold or transmitted all that unused power.

Nobody got stuck with the Act, but nobody made out like a bandit either.

The Direct Service Industries

ERIC REDMAN is an attorney in Seattle, Washington. During the lobbying on the Northwest power bill, Redman represented the direct service industries.

In its original form, the Act was designed to accomplish something very simple, which, even in its final complex form, it did accomplish. It was designed to allocate power by statute among Bonneville's customers in some agreed-upon fashion so that all of Bonneville's customers would have two things: 20-year power sales contracts that they could rely on, and freedom from the uncertainty that would have followed any administrative reallocation of power by Bonneville. Everyone got that.

You hear people say the Act was in response to a regional power shortage, but that is not true. It is true that the Act assumed a shortage, but even if a surplus had been expected, all the contracts were going to expire, and there would still have been an administrative reallocation of Bonneville power. And everybody knew the court battles over that reallocation policy could drag on for decades.

Even with today's surplus, Bonneville would not be able to enter into 20-year requirements contracts if we did not have the Act in place.

"You hear people say the Act was in response to a regional power shortage, but that is not true."
Eric Redman

The bill provided a method of allocating costs, but it didn't provide any method of guaranteeing what the costs themselves would be. Power costs for Bonneville in general and direct service industries in particular are higher than we anticipated. One of the reasons this happened is because the whole concept of exchange got changed after the Act was signed.

The original concept of the Act was that the wholesale cost of power to serve residential and small farm customers would be the same, whether those customers were served by public utilities or private ones. Rate parity might be maintained by Bonneville paying money to exchanging utilities — or exchanging utilities paying to Bonneville, if Bonneville's rates went higher than private utility rates. But the public utility commissions decided they couldn't allow such risky contracts. What happened in practice is that the private utilities now can stop exchanging whenever it isn't convenient for them.

The Act did provide, for the first time, a procedure and a forum for openly thrashing out issues about rates. Before, the decisions were made unilaterally. Customers only had the right to make a statement, not to cross-examine witnesses.

"If you want to be one of the ones making the decisions you have to accept that that type of rigor and discipline is imposed, not by any institution, but by the complexity of the system itself."
Eric Redman

It looks as if the fish provisions are going to be a lot more effective —and more expensive—than some of us anticipated they would be.

What I would really like to see is longer terms served by the Council members so that the members, and not the staff, would, over time, become a repository of expertise and institutional memory of power matters. The Council wants to be listened to when it speaks, but its ability to effectively accomplish that objective depends on its being perceived as knowledgeable not only of public policy but also of technical matters.

Learning about the Northwest power system, because it is the most complex power system in the world, is something that occurs in stages. Just when you lift the twenty-seventh veil and think you finally see the face of the problem, you find that what you really see is the twenty-eighth veil. I am not saying decisions can only be made by a Mandarin. What I am saying is that you have to bring to the process a willingness to accept and even revel in the complexity of it.

Kai Lee gave a piece of testimony during the work on the Act in which he said, decisions will be made in the end by those who come early and stay late. If you want to be one of the ones making the decisions you have to accept that that type of rigor and discipline is imposed, not by any institution, but by the complexity of the system itself.

Clearly, expectations were high when the Northwest Power Act became law.

- There were critical problems facing the region's electrical energy managers and consumers. The Act was designed to resolve them.
- There was a precipitous decline in the salmon and steelhead of the Columbia River Basin. The Act was a last ditch effort to turn that around.
- There was a sense of frustration among consumers of electrical energy in the Northwest. Electrical rates were rising fast, and there appeared to be no mechanism for ordinary people to play a role in the decisions that were affecting their electricity bills.

Five years is not a long time to wrestle with the kinds of changes precipitated by the Act. But much has happened in *these* five years in *this* region. Still, no one will argue that the task is completed. What the Northwest has now that it lacked five years ago is a structure and a process for tackling the problems—a mechanism for enabling change to occur in responsive and responsible ways.

With this foundation in place, the real work may be just beginning.

— CC

Shorts

Energy efficient mobile homes are the goal of a new contract awarded by the Bonneville Power Administration. Five manufactured homes will be built to the same energy efficiency levels as homes built on site under the model conservation standards recommended by the Northwest Power Planning Council. The manufactured homes will be built in Centralia, Washington. Both Bonneville and Battelle Laboratories will test the efficiency of the homes without occupants for a month. After that, the homes will be auctioned off to buyers who agree to allow continued testing during their first year of occupancy.

Free materials about conservation and renewable energy are available to the public from the Conservation and Renewable Energy Inquiry and Referral Service (CAREIRS). The service, operated by Solar America, Inc., and the Franklin Research Center under contract to the U.S. Department of Energy offers over 170 fact sheets, bibliographies, pamphlets and booklets to people seeking basic and intermediate level information on solar energy, wind, biomass, hydropower and conservation. Most requests are answered within 48 hours. Call toll-free 800-523-2929 or write P.O. Box 8900, Silver Spring, MD 20907.

The number of low-income homes weatherized has doubled since last year, according to the Bonneville Power Administration's Conservation Manager Steve Hickok. About 4,100 low-income customers in the Northwest had their homes weatherized under BPA's residential weatherization program. The $6.7 million effort includes such measures as storm windows, insulation, weatherstripping and caulking, sealing and wrapping heating and cooling ducts, dehumidifiers, clock thermostats, and heat recovery ventilators. To qualify, a utility customer must have a household income less than 125 percent of federal poverty guidelines. The average family of four with a total annual income of $13,313 would qualify.

The ways in which utilities will expand is the keynote subject of the October 1985 issue of *Public Power* magazine. While expansion in the 1970s was characterized by large-scale coal and nuclear generation, the future, according to the article, will be characterized by utility programs to influence load shape and manage customer demand, smaller facilities of standardized design to shorten lead time, stringent environmental performance, and flexible financing appropriate to the technology. Other prognostications include improved efficiencies through new conversion cycles, cogeneration, and waste-heat recovery; increased competition from local resources; fuel flexibility that would spread the mix of generating options and employ multi-fuel capabilities, and unit and dispatch availability.

The latest developments in energy storage are the subject of a 270-page case study of 13 utilities and 12 equipment vendors. The study examines the experiences and opinions of those involved in four storage technologies: heat storage (e.g. heat stored in bricks or floor slabs for residential use); cool storage (e.g. cooling stored ice, chilled water or ethylene glycol for commercial and industrial buildings); compressed air energy storage; and underground pumped hydro. Although much of the utility industry experienced overcapacity, many utilities have problems meeting peak demands during certain seasons or times of the day. Energy storage can solve some of these problems. Copies of the report are available for $45 ($15 for nonprofit organizations). Write Inform, 381 Park Avenue South, New York, N.Y. 10016 or call (212) 689-4040.

Russians are hearing about the Northwest's fish and wildlife program through an article published in the environmental law publication of the Institute for Scientific Information of the Academy of Sciences of the U.S.S.R. The article, which appeared in abstract form, is "Implementing the Parity Promise: An Evaluation of the Columbia Basin Fish and Wildlife Program" by Michael Blumm, professor of law at Lewis and Clark College in Portland, Oregon. This is the second of Blumm's articles which has appeared in the Soviet Union. The first dealt with anadromous fish resources and their "struggle for peaceful coexistence" with the Columbia River hydropower system. The fish and wildlife program referred to in Blumm's article was developed by the Northwest Power Planning Council. (Source: Lewis & Clark Faculty News)

An energy hotline was instituted in Washington this year to answer questions about how to build energy-efficient electrically heated houses. Funded by the Bonneville Power Administration, the hotline is operated by the Washington State Energy Office to make energy information easily accessible to the public. People who have used the hotline include contractors, owner/builders, designers, architects, homeowners, and the "curious." Most questions, according to the energy office, have centered on construction techniques, vapor barriers, and heat recovery ventilators. The hotline operates weekdays between 9 a.m. and 4:30 p.m. and can be reached by calling 1-800-692-0202 (in Seattle 352-4198).

Shorts

Legal concerns that govern restoration of Pacific salmon runs are the subject of a special issue of *Environmental Law*; the journal of the Northwestern School of Law at Lewis and Clark College. This special issue includes articles by Washington Senator Dan Evans, Northwest Power Planning Council member Kai Lee, Alaskan Senator Ted Stevens, and Dr. John Byrne, President of Oregon State University. Topics covered in the special symposium range from Indian treaty rights to the implications of federal legislation and regulatory procedures. Copies of this winter issue are available for $8.00 from: *Environmental Law*; Lewis and Clark Law School, 10015 S.W. Terwilliger Boulevard, Portland, OR 97219.

As many as 20 million kokanee salmon could be produced at the new hatchery that opened in November on Idaho's Clark Fork River. The new hatchery, a joint project of Washington Water Power, the Idaho Department of Fish and Game, and the Bonneville Power Administration, is intended to offset the loss of fish in Lake Pend Oreille. Hydropower operations at the Cabinet Gorge and Albeni Falls dams on the Clark Fork have been blamed for substantially reducing kokanee spawning habitat around the lake and altering lake levels, leaving spawning nests (redds) exposed. The hatchery was called for by the Northwest Power Planning Council in its Columbia River Basin Fish and Wildlife Program. The new hatchery is expected to nearly double the value of the Lake Pend Oreille kokanee fishery (currently estimated at $2.7 million annually), according to Bonneville officials.

COMMENT INVITED ON SURVIVAL OBJECTIVES

The Council is taking public comment through January 24, 1986, on the objectives set for juvenile fish survival at the mainstem dams operated by the Army Corps of Engineers on the Columbia and Snake rivers. If adopted, these guidelines will be an amendment to the Council's Columbia River Basin Fish and Wildlife Program.

The guidelines reopen the question of what percent of young salmon and steelhead should be expected to survive their downstream migration past the eight Corps dams. Without protection, the young fish must pass through the turbines at each dam, with a resulting fish loss of about 15 percent per dam. To avoid the turbines, the existing program calls for releasing fish-laden water through spillways (spilling), installing or improving mechanical bypass systems, and transporting the fish around the dams in trucks and barges.

The proposed amendment concerns interim survival objectives to guide spill planning and management. These objectives may be in place until permanent mechanical improvements are made at each of the Corps dams. The objectives would provide varying spills based on annual water conditions.

Hearings to discuss the proposed change will be held in each state in the region. Call the Council's central office for a schedule.

The Council anticipates making a decision on the survival objectives in February 1986, to have them in place for the 1986 spring migration.

For copies of the proposal, see the order form on the back cover, or call Judy Allender at the Council's central office, (503) 222-5161, or toll free: 1-800-222-3355 in Idaho, Montana, Washington, 1-800-452-2324 in Oregon.

—R.C.

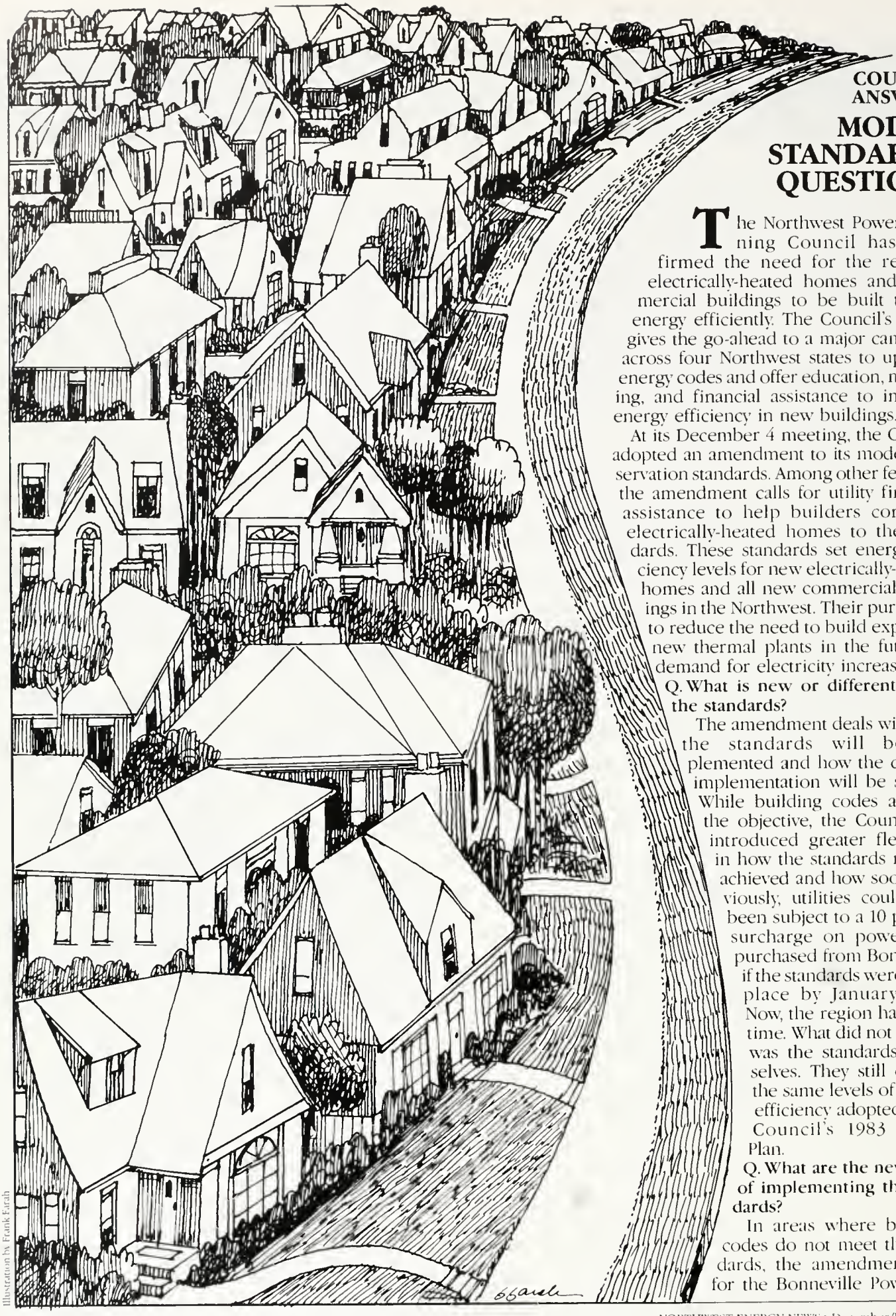


Illustration by Frank Farah

COUNCIL ANSWERS

MODEL STANDARDS QUESTIONS

The Northwest Power Planning Council has reaffirmed the need for the region's electrically-heated homes and commercial buildings to be built to use energy efficiently. The Council's action gives the go-ahead to a major campaign across four Northwest states to upgrade energy codes and offer education, marketing, and financial assistance to improve energy efficiency in new buildings.

At its December 4 meeting, the Council adopted an amendment to its model conservation standards. Among other features, the amendment calls for utility financial assistance to help builders construct electrically-heated homes to the standards. These standards set energy efficiency levels for new electrically-heated homes and all new commercial buildings in the Northwest. Their purpose is to reduce the need to build expensive new thermal plants in the future as demand for electricity increases.

Q. What is new or different about the standards?

The amendment deals with how the standards will be implemented and how the costs of implementation will be shared. While building codes are still the objective, the Council has introduced greater flexibility in how the standards may be achieved and how soon. Previously, utilities could have been subject to a 10 percent surcharge on power they purchased from Bonneville if the standards were not in place by January 1986. Now, the region has more time. What did not change was the standards themselves. They still call for the same levels of energy efficiency adopted in the Council's 1983 Power Plan.

Q. What are the new ways of implementing the standards?

In areas where building codes do not meet the standards, the amendments call for the Bonneville Power Ad-

ministration and utilities to offer a program that will be an incentive for builders to construct new electrically-heated homes to the standards. This program, called the BPA/Utility MCS Program, will offer both marketing and financial assistance. The marketing segment of the program is the Super Good Cents package, which Bonneville already has offered to utilities in the region. Utilities which do not choose to participate in the BPA/Utility MCS Program may offer an alternative program so long as it is judged by Bonneville to produce equivalent savings and does so.

Q. What financial assistance will utilities be responsible for?

Bonneville will pay $2,500 per home to its utility customers. To those utilities which do not purchase power from Bonneville, Bonneville will pay for the value of the utility's energy savings to the Bonneville system. In addition, local utilities in the program will make payments ranging from $130 to $1,070. These payments vary from state to state depending on climate zone and local building practice. Together with the Bonneville payment, these payments represent the average amounts it will take to bring a house from current building practice to the level of energy efficiency required by the model conservation standards. The payments should go down each year as builders gain more experience building energy efficient homes. While ratepayers ultimately fund the utility payments, this is still significantly cheaper than paying for new coal plants.

Q. What are the timelines for meeting the standards?

Utilities must choose to participate in the BPA/Utility MCS Program or submit their own equivalent program by September 1, 1986. The programs are to go into effect for 1987 and must produce at least 30 percent of the savings possible through the Model Conservation Standards in that year. For 1988, the Council will set a new target. Compliance will be checked annually until at least 85 percent of the new electrically-heated buildings in the utility area are built to the standards.

Q. How will performance levels be determined after 1988?

After the 1987-88 performance years, Bonneville will rank the top performing utilities which serve 80 percent of the new housing in the Northwest. Performance will be measured by the percent of energy saved out of the total savings that would have occurred had all new homes in that utility's area been built to the standards. The lowest performer in that utility group will set the minimum performance level all utilities must meet to avoid the surcharge. Bonneville will evaluate performance annually.

Q. What about utilities which submit an alternative program?

Utilities must show that their own programs achieve energy savings equal to the BPA/Utility MCS Program. Alternative programs must meet the average energy savings achieved by participants in the BPA/Utility MCS Program and must also meet the minimum performance levels described above.

Q. What about the standards for commercial buildings?

Utilities must submit programs for commercial buildings by the same dates as for residential buildings, and must meet performance and equivalency tests as well.

Q. How will smaller utilities be treated?

Utilities with annual power loads under 25 megawatts (usually serving a population under 10,000) can avoid the surcharge even if they do not meet the minimum performance level so long as they offer in the performance year to pay the incremental costs of building homes in their service territories to the level of the standards. The payment will be based on the median costs of builders in the Residential Standards Demonstration Program. To be eligible for this option, these utilities must be participating in the BPA/Utility MCS Program.

Q. What about other features of the model conservation standards?

The program for early adopters (jurisdictions which have adopted codes meeting the standards) will continue, including financial assistance to state and local governments for code enforcement. Training for builders, insulation contractors, and lenders is also a continuing feature of the standards. In addition, the standards require that indoor air quality be maintained at a level at least as good as that in homes built to current codes or practice. The Council's plan also calls for continuing research on indoor air quality as well as research on less expensive ways to save electrical energy.

Note: This story only describes highlights of the MCS amendment. For full information, please contact the Council for a copy of the complete rule.

MODEL CONSERVATION STANDARDS
LOCAL UTILITY FINANCIAL ASSISTANCE 1987-88

	Zone 1	Zone 2	Zone 3
Washington	$ 130	$ 280	NA
Oregon	440	830	NA
Idaho	1070	1070	$440
Montana	NA	NA	440

Calendar

NOTE: At press time, the late January and February meetings of the Northwest Power Planning Council had not been set. Please call the Council's central office for information on those meetings.

January 19-22 — 1986 Winter Meeting of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) in San Francisco, California. For information: Carolyn Stewart, ASHRAE, 1791 Tullie Circle NE, Atlanta, Georgia 30329. (404) 636-8400.

January 23 — "Commercial Energy Forum: Ventilation Based on Carbon Dioxide Sensing and Control," sponsored by the Oregon State University Extension Service in Portland, Oregon. For information: Susan Vogt or Dave Burtner, OSU Extension Service, (503) 241-9172.

February 11 — "Commercial Energy Forum: Applications for Energy Management Systems in Grocery Stores," sponsored by the Oregon State University Extension Service in Portland, Oregon. For information: Susan Vogt or Dave Burtner, OSU Extension Service, (503) 241-9172.

February 12-14 — "Streamside Management: Forestry and Fishery Interactions" in Seattle, Washington, sponsored by the University of Washington. For information: Diana Perl, College of Forest Resources, AR-10, University of Washington, Seattle, Washington 98105. (206) 543-0867.

March 4-6 — "1986 West Coast Energy Management Congress" in Los Angeles, California, sponsored by the Association of Energy Engineers. For information: Alma McFarland, 4025 Pleasantdale Rd., Suite 340, Atlanta, Georgia 30340. (404) 447-5083.

June 3-5 — "4th Annual Renewable Energy Technologies Symposium and International Exposition" at the Anaheim Convention Center in Anaheim, California. For information: Barbara Flynn, Renewable Energy Institute, 1516 King St., Alexandria, Virginia 22314. (703) 683-7795.

June 8-14 — "11th Annual National Passive Solar Conference" at the University of Colorado in Boulder, Colorado. For information: Susan Burley, 2030 17th St., Boulder, Colorado 80302. (303) 443-3130.

Illustration by Nance Sasser

Illustration by Dennis Cunningham

THE GOALS PROCESS UPDATE

by Ruth Curtis

Three years ago the Northwest Power Planning Council, working with the Northwest's fishery interests, developed the Columbia River Basin Fish and Wildlife Program to protect and enhance the fish and wildlife that had been hurt by hydropower development in the basin. Because of the urgent need for remedial action, the Council temporarily put aside questions fundamental to the nature and scope of the program. These were such issues as the extent of salmon and steelhead losses and the degree to which ratepayers should be expected to restore these fish populations. Instead the Council proposed a goals study that would answer these questions.

The goals study is now well underway and, when it's completed this coming summer, it will provide overall long-term goals for the region and then smaller, short-term, geographically specific production objectives for individual streams or river basins. These objectives are the building blocks that will be used to meet the program's overall goals.

The last issue of this magazine contained a detailed description of the entire study — "The Great Goals Study." This is an update of the study's major activities.

Losses and Contributions

In early December, the Revised Draft Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin was sent out for public review. An earlier version of the draft had been distributed in the fall. Because a substantial amount of comment was received from the region's fish and wildlife agencies, Indian tribes and others, and additional information was uncovered, that draft was rewritten and again released for public review.

The Compiliation presents an estimate of the current size of the salmon and steelhead resource, as well as the historical abundance of the various species. The revised draft, incorporating any changes suggested during the latest public comment process, will be presented to the Council for approval in February.

This information will be the basis for determining hydropower development's contribution to the resource's decline. The losses had many causes — logging, over-fishing, etc. — but the Council is only responsible for hydropower-related losses. In February, a paper discussing hydropower's contribution will be distributed for public comment.

Planning Workshop

For three days in December and two more in January, representatives from the region's fish and wildlife agencies, Indian tribes, and power interests gathered in Portland to develop modeling procedures which will be used to set production objectives for the Columbia River Basin.

Much of the workshop dealt with educating the participants on the application of "adaptive management principles" to the basin's salmon and steelhead resources. These principles will be used in developing the production objectives.

Adaptive management encourages the protection and enhancement of the resource, but also recognizes the existence of scientific uncertainty about that resource. What this means is that restoration actions with uncertain results may be taken now, because the resource is in crisis. But, these actions are designed as experimental probes that can be monitored to test their effectiveness so they can be adapted as needed to better fit the resource's response.

The workshop used four representative basins, to devise methods for developing and meeting the Council's production objectives. Experience gained in the workshop will help the Council frame these objectives.

Amendment Deadline Delayed

In mid-November, the Council voted to postpone for two months the deadline for interested parties to submit applications to amend the Columbia River Basin Fish and Wildlife Program. The new deadline is February 16, 1986.

Salmon and Steelhead Database

The first regionwide database containing information on salmon productivity is now up and running. While it is not yet complete, it is being used by the Council and fishery managers to tell where the fish actually are, down to the individual stream reach. It can even be used to produce computer-generated maps showing the fish stocks in a specific geographic area.

The Council's staff and contractors have been gathering all existing information on redd counts (spawning nests), juvenile fish counts, harvest figures, hatchery releases, and other data, organizing it, and feeding it into the database. Very soon it will be possible to use the database to estimate the productivity of the basin on the subbasin level. This information will be used in developing the productivity objectives.

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: Not all publications are available immediately, but will be sent to you as soon as they are.)

Publications

- ☐ 1986 Power Plan (Do not check if you ordered the Draft. It will be sent to you automatically when available.)
- ☐ Notice of Final Model Conservation Standards Amendment (see page 36)
- ☐ Columbia River Basin Fish and Wildlife Program Goals Study — Contributions Issue Paper (see page 39)
- ☐ Amendment Application Form — Columbia River Basin Fish and Wildlife Program (see page 39)
- ☐ Proposed Amendment and Issue Paper — Interim Juvenile Fish Survival Objectives (see page 35)

Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: Do not check if you already are receiving them.)

- ☐ *Northwest Energy News* (this bimonthly magazine)
- ☐ *Update!* (public involvement newsletter mailed with the Council meeting agenda)

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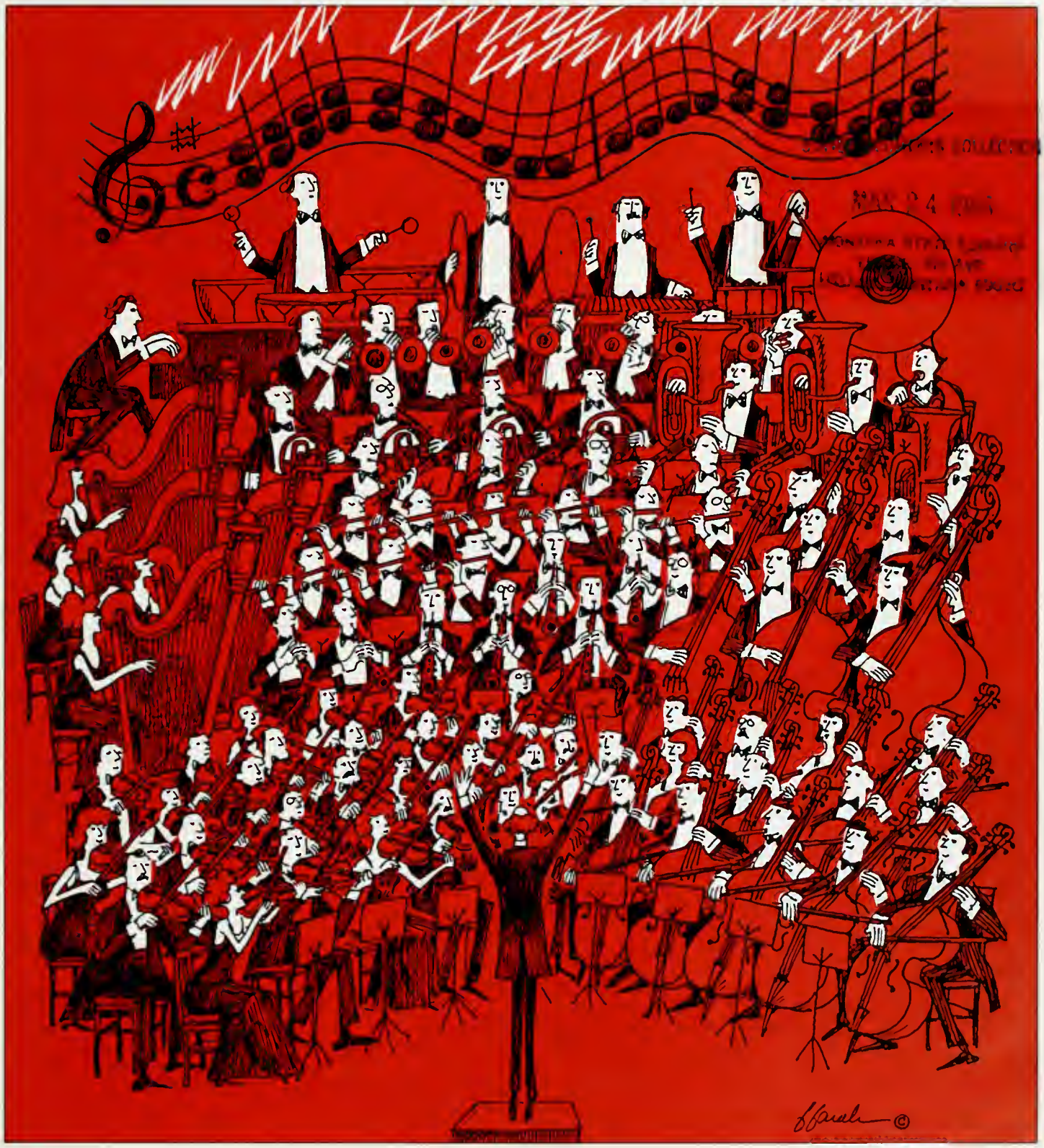
NORTHWEST ENERGY NEWS

Volume 5, No. 2 | Northwest Power Planning Council | February/March 1986



INSIDE: NEW POWER PLAN ORCHESTRATES REGIONAL HARMONY

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N O R T H W E S T
ENERGY NEWS

is published bi-monthly by Northwest Power Planning Council, 850 SW Broadway, Suite 1100, Portland, Oregon 97205.

The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources.

Executive Editor: Carlotta Collette
Art Director: Stephen Sasser
Assistant Editor: Steve Engel
Special Departments Editor: Ruth Curtis

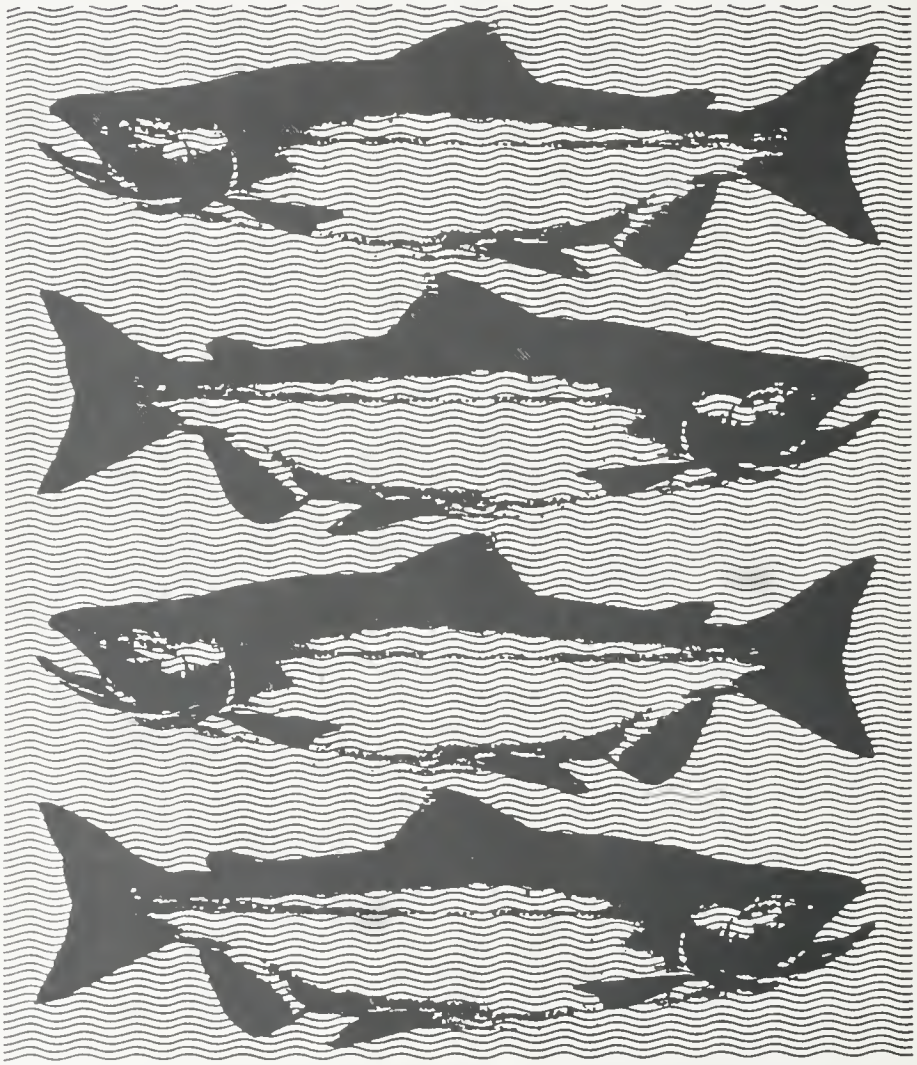
Editor's Notes

On January 23, 1986, the Northwest Power Planning Council adopted a new Northwest Electric Power and Conservation Plan for the next 20 years. Last fall we ran a special issue of *Energy News* (Volume 4, No. 4) describing the draft of this plan. This issue presents an overview of the final plan, major changes from both the draft and the original 1983 plan, and a summary of key actions to be taken in the near future.

With the adoption of the power plan, much of the activity at the Council will shift back to the Columbia River Basin Fish and Wildlife Program. On February 18, the Council closed the applications process for amendments to the program. Copies of the proposed amendments will be available in the near future. Use the order form on the back cover of this issue to have a set (this is a multi-volume publication) sent to you.

The Council's staff will be reviewing all applications over the next several months. Public discussions of the proposed changes will be held in each of the four states in the region. The entire process, like that for the power plan, will take one year.

COVER ILLUSTRATION: Frank Farah, a frequent illustrator for this magazine, produced our cover drawing.



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INTERVIEW:

Council Chairman Bob Saxvik

by Dulcy Mahar

ROBERT SAXVIK of Idaho, the Northwest Power Planning Council's chairman, is one of the Council's original members. Prior to joining the Council in 1981, Saxvik was chief of staff for Idaho Governor John Evans and vice president and general manager of KBAR radio in Burley, Idaho. Saxvik served three terms in the Idaho State Senate where he was assistant senate minority leader. He was legislative liaison with the governor from 1977 to 1978, and director of the Office of Aging in 1978.

Q. Now that the Council has a few years under its belt—as well as a new power plan—what changes do you see? What has been learned, by the Council and by the region?

We've got the '83 experience of developing the first plan behind us. The 1986 plan builds on that. We've had the advantage of time between the two plans to gain more understanding within the region of what the planning process is all about. I believe we've established a credible base with all the groups involved in that process. Working from that base, the Council will pick issues that we see as beneficial to the regional system.

Specifically, I'm thinking about such things as the West Coast Energy Study, where we sit down with other regions to talk about our mutual needs in power sales and exchanges, and the exploration of nonfirm power and renewables as resources of the future.

I expect the Council to be more focused on specific programs and issues rather than the broad playing field. People have a better idea now of what we mean by "resource development" or "flexible planning" or "optioning." We will have to take the lead in working with various interests to put these concepts into practice.

We have a lot of ideas on the table—options, renewables, nonfirm power. Some have general acceptance; some are brand new areas. But they're all approaches we have to explore. We have to work through these concepts.

Now that the plan is behind us, we'll have the breathing room to take a reasoned look at future resources. The surplus has given us a grace period, but the region will miss the point if it uses the surplus as an excuse not to do anything. We can't waste this time.

Photo by Steve Engel

"I expect the Council to be more focused on specific programs and issues rather than the broad playing field."

Q. What do you see ahead of the Council in the immediate future?

This will be a major year for fish and wildlife. The fact that you haven't heard the Council talking much about that lately reflects our involvement in the 1986 energy plan. We've just ended a pretty intense year working on the new power plan, so that's obviously very much on our minds and in our conversation. We are now embarking on an equally intense look at our fish and wildlife program. That topic will be foremost in our minds during this year.

I don't think the issues in fish and wildlife will be new so much as it will be a case of maturing of issues. The priorities are still to help juvenile fish make a safe passage downstream to the ocean and to get them back upstream again to reproduce. Our new focus is an effort to define the losses, to the extent that's possible, of salmon and steelhead due to hydropower. From there, we'll be looking at goals and objectives that will set the ratepayers' responsibility for enhancing the resource and will define the actions the region needs to take. Later this year, we expect to see results from a study that will help us assess the impacts of potential hydropower development on the

Photos by Ralph Perry and Judith Rafferty

environment, and specifically on fish and wildlife. We expect to designate areas that should be protected from development as a result of this study.

Q. What are your specific priorities as Council chairman?

I think the Council has to take an active role through its public involvement—I know this is an overused word—outreach. It may sound trite, but I firmly believe we have to work in the vineyards. We view public involvement as a mandate. We have an obligation to involve people, and not just wait for them to come to us.

We'll have more time to do field work now. We'll be looking for organizations with committees or interests in fish and wildlife and energy, and we'll be actively trying to get on their agendas. I don't just mean the traditional players, but civic organizations and any groups of citizens who are interested, or who should be interested, in the issues we deal with.

I want to give more attention to private utilities and public utility commissions. By that, I don't mean giving less attention to other players. But the plan stresses the very great regional benefits of cooperation between both public and private utilities. The Action Plan in the first plan only focused on Bonneville and its public utility customers. We didn't pay much attention to some very important players in the region, such as the public utility commissioners or the private utilities. If the plan is going to achieve our goals, we've got to include these groups.

Q. As someone who's been on the Council since its inception, you have a unique perspective. How do you see the Council; what do you want it to be?

I want the Council to be a living, breathing and interacting body. I want it to live up to its public involvement commitment.

"I want the Council to be a living, breathing and interacting body. I want it to live up to its public involvement commitment."

There's a tendency that when an organization ages, it withdraws into a smaller circle. We have to be alert to prevent this. We've got to keep our eyes and ears open to all sectors.

Providing a regional meeting table for airing a lot of tough issues has served this organization well. The Council has learned a lot from a wide variety of players in the region—utilities, environmentalists, and so on. We need to continue to learn from each other.

I think there's a growing, and possible grudging, recognition that we're open. A lack of communication is the bane of us all. We have inhouse expertise to give to others. There's no benefit to hiding our light under a bushel basket and congratulating ourselves. We have superb analytical work. Unless we can translate that to the region at large, we have no gain.

Q. You are a member of a National Governors Conference Committee that put a bill together to allow other parts of the country to enter into regional arrangements. Where do you see this headed?

I predict that this type of legislation will come to pass. This may sound like pie in the sky, but I've always believed the Council has been a good national model for other regions to take a look at, whether it's energy or other shared resources. The regional concept is an excellent way to find out where common ground exists.

It's not only the Northwest, but the West as a whole, whose lifelines have been resources based in areas of forestry, agriculture, and mining. We have got to recognize limitations on growth in those areas. The West in general must speak as a unit, because it has characteristics that are different from the South and East. We don't need Wall Street telling the nation what the West is about. We need the West telling its own story.

The Council has been asked to serve as part of a network for an economic research center, along with representatives from the private sector, government, and education. It's operating under the aegis of the Western Governors Conference. I am proud that the Council will be serving in an important advisory capacity at the highest level. I believe the West must evaluate its resources and benefits and make a statement, and I believe the Council can make a contribution to that statement.

Q. The Council's relationship with the Bonneville Power Administration has been the subject of some speculation, both privately and in the media. How would you characterize this relationship?

I don't want to get flip and give Bonneville a six or seven on a scale of ten. What I really want to say, though, is that maybe we're past the "creative tension" syndrome. [A phrase Senator Dan Evans, first chairman of the Council, used to describe the relationship.] Human nature dictates that there was bound to be a testing period with anything as dynamic as a four-state Council. We had to shake out the role playing aspect. In the beginning there was a lot of punching in the dark, and it wasted time for both parties.

The questions of how much authority or power the Council has or whether it should be a regulatory body all pass into the dust, if we establish credibility with our product. In both the fish and wildlife and power areas we have made great strides to do just that. The Council tries to keep in mind what's in the best interests of the regional (power) load. The bottom line is the consumer, whether he or she is on the end of a power line or a fishing line.

If Bonneville has the same bottom line, we're going to get along. To the degree that Bonneville has a different agenda, then there is likely to be friction.

My gut feeling is that the relationships have improved over time. But I still see some bumps along the way. It's a classic case of defining a state and federal relationship, and we're still making that definition. Like anything else, there's a human element involved. Still, the relationship between the Council and Bonneville on the rhetoric level is not the same as the day-to-day working relationship between the two, and the latter is the more positive relationship.

Q. What do you see as the future role of the Council?

One cannot forget that our reason for being here was the expressed desire of four Northwest governors to give the Northwest a buy-in to the federal power system. The uniqueness of it is that the Northwest Power Act defined the Council's role. The governors also bought off on that part of the Act—that there was a definite role for the Council.

I never want to see the day that the Council is viewed as a rubber stamp for Bonneville, or anyone else for that matter. Instead, we must continue to give policy direction for energy and fish and wildlife in the Northwest, not only to Bonneville but to the direct service industries, the utilities and, ultimately, the consumers.

Q. What do you consider the Council's major achievements?

I would say the quality and level of information the Council has developed for decision making is one of the biggest contributions it has made to the region. The Council has revolutionized demand forecasting with its range of uncertainty and its unique way of looking at the future and accepting that it is unpredictable. That has given us a realistic basis for dealing with uncertainty. You aren't going to have flexibility in planning if you don't first accept this basic premise that the future is indeed uncertain.

The other equally important contribution the Council has made is its ability to get a lot of people with all sorts of different interests to sit down and talk to each other in an open process. We have taken major decision making out of the board rooms and brought it out into the daylight.

Q. What are your feelings about the proposed buy-out of the Bonneville Power Administration?

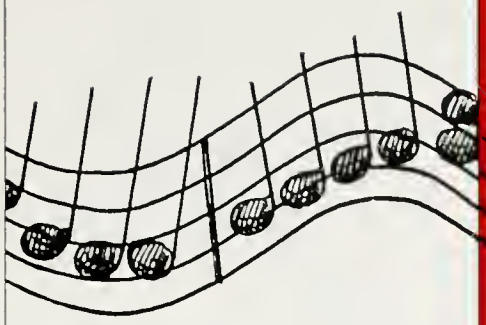
There are two issues here. One is the motivation of the sellers to accelerate the Bonneville repayment schedule to help the federal deficit. On the other hand, from the Northwest point of view, the motivation is to have a say in determining our own energy destiny and keeping electricity rates down. If it is possible that both objectives can be served, then the idea is worth looking at.

At this stage there are a lot more questions than answers. But asking questions isn't necessarily a bad thing. It is always positive to look for ways we in the Northwest can better control our destiny. If this is a vehicle for that sort of discussion, that's positive, regardless of the final determination. I anticipate the Council will be participating in the discussion.

Q. How do you feel about the new Council appointments?

I think the two gubernatorial appointments that are coming on board are very promising. Of course there's an institutional loss [with Roy Hemmingway and Chuck Collins leaving], but I'm encouraged and very heartened by the quality of the new appointments. Both Tom Trulove and Bob Duncan are very publicly oriented, and they have excellent records of service in the public arena. I see this as a real opportunity for institutional growth.

"One cannot forget that our reason for being here was the expressed desire of four Northwest governors to give the Northwest a buy-in to the federal power system."



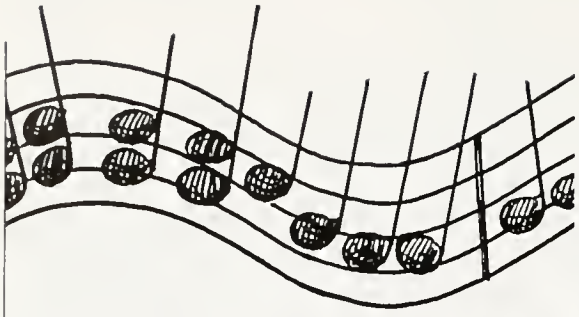
New Power Plan

Orchestrates Regional Harmony

by Dulcy Mahar

Will the Pacific Northwest have enough electrical power over the next 20 years to support a growing economy? And are there ways to ensure that the Northwest's electrical power needs can be met at the lowest cost to the region? The answers depend on what actions the Northwest takes in the very near future, according to the Northwest Power Planning Council. After a year-long public involvement process, the Council adopted its new 1986 Northwest Power Plan on Thursday, January 23.

Frank Farah Illustration



"The status quo is leading the region in a direction that will benefit neither the Northwest's ratepayers nor the Northwest economy."
—1986 Power Plan

The plan states, "The status quo is leading the region in a direction that will benefit neither the Northwest's ratepayers nor the Northwest economy. This plan points to a better future, one in which all the region's power institutions cooperate to develop and share the lowest cost resources for the entire Pacific Northwest."

A key theme throughout the plan is cooperation. The new plan calls for an unprecedented level of cooperation among utilities — both publicly and privately-owned — that involves sharing and developing new resources on a regional basis. The Council identifies a $2.2 billion benefit to the Northwest for such cooperation (see Figure 1). The value of these regional power savings is expected to have a major impact on the Northwest economy in that it will minimize and stabilize future rate increases. The goal is to protect and maintain the Northwest's low-cost electricity, a resource that has drawn business and industry to the region despite the fact that the Northwest is far from major markets.

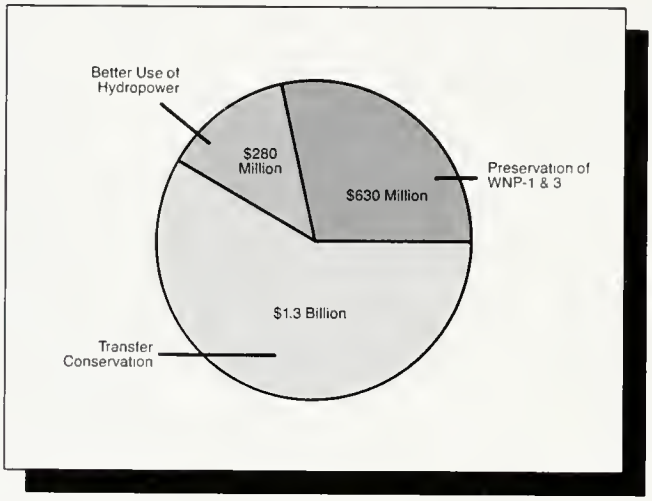
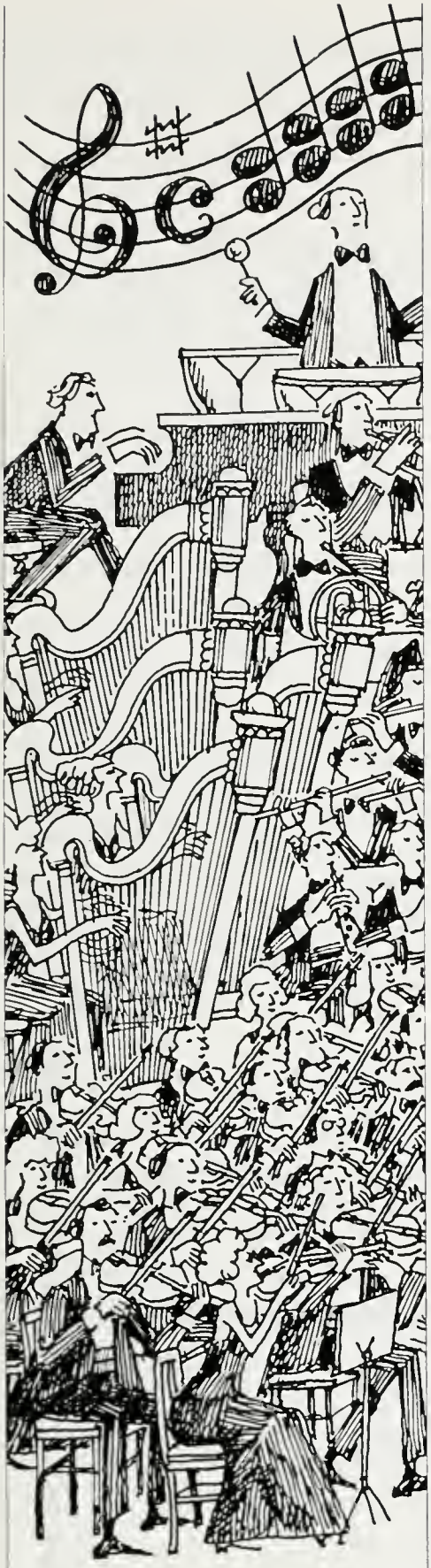


Figure 1
Benefits of Regional Cooperation

Congress requires the Council to review and change its power plan, where necessary, at least every five years. Under the Northwest Power Act, the Bonneville Power Administration is to develop resources in a manner consistent with the Council's plan. The Council adopted its first power plan in April 1983, but decided to develop a new 1986 plan because of major changes in the Northwest in the past three years. These changes, as well as highlights of the plan, are outlined in the following summary. Copies of the entire plan, printed and bound, will be available in March. (See order form on back cover.)

Major changes in the Northwest's electrical power picture

The current surplus of electricity has turned out to be far more expensive than previously anticipated. In the past, any surplus was inexpensive hydropower, which could be sold relatively easily for a profit. Now, the region's surplus electricity includes power from expensive coal and nuclear plants, which is at least 11 times as expensive as electricity from the existing hydropower system. This makes it difficult for the Northwest to recover the costs of producing the surplus. Northwest ratepayers end up paying part or all of the tab for electricity they do not need.



Further complicating the picture is the fact that the surplus is not evenly shared. The bulk of it belongs to the publicly-owned utilities served by the Bonneville Power Administration. However, the highest growth areas in the Northwest are in the suburbs surrounding Seattle, Washington, and Portland, Oregon, areas served largely by investor-owned utilities.

If the region remains divided, it faces the prospect of developing far more expensive resources than would be necessary if utilities were to take a cooperative approach. The "worst scenario," the Council notes, is one in which low-cost conservation remains undeveloped in utility areas with surplus electricity, while other utilities turn to much more costly thermal resources.

The $2.2 billion savings that the Council has identified would accrue over the next 20 years if the region develops resources cooperatively. This involves transferring conservation savings from utilities with surplus power to those with growing power needs, strategies for better use of the existing hydropower system (see "resource portfolio," below), and a regional effort to preserve two unfinished nuclear plants as potential options that could be used in the event new demand for power grows at a rapid rate.

Adding to the present uncertainty about future electrical energy needs is the fact that the surplus is unpredictable and could dry up quickly if the Northwest were to experience high economic growth. Two specific developments that have particularly increased the uncertainty in the Northwest power picture since the 1983 Power Plan involve the Northwest's aluminum industry and two unfinished nuclear plants in Washington.

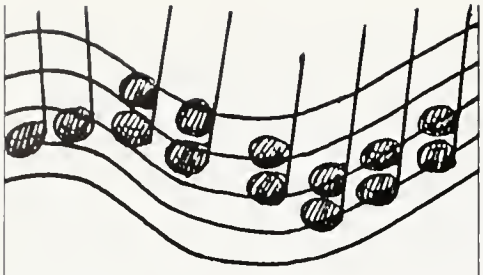
The aluminum industry uses nearly 15 percent of the Northwest's electricity, but because of a depressed market and increased competition from aluminum producers in other parts of the world, some Northwest smelters have shut down or reduced production. How much of the region's aluminum industry will be around in the next 20 years is a major question. The Council has recognized this uncertainty in its planning process.

In addition, construction remains suspended at the Washington Public Power Supply System Nuclear Projects 1 and 3, which the 1983 Power Plan assumed would be completed. While the Council did identify an average value of $630 million to the region if the plants can be preserved to meet high energy growth, there are questions about whether the litigation and possible difficulties with financing these plants can be resolved so that they can be preserved and completed when needed. Another issue surrounding the plants is the allocation of costs to preserve them. Publicly-owned utilities, which currently bear most of the costs, by and large will not need their power, while investor-owned utilities may. The Council examines these and other issues related to the plants in its new plan. (See story on how the plants are treated in the plan on page 17.)

Priorities of the new power plan

The new plan emphasizes the following priorities. Specific activities to achieve these objectives are outlined in the plan's Action Plan (see page 18).

- **Securing "lost opportunity" resources.** These are cost-effective resources that, if not developed now, could be lost forever to the region. The most prominent example is model conservation standards for new buildings. If buildings are not constructed to be energy efficient now, they will continue to use electricity inefficiently long after the surplus is over.
- **Promoting a stronger regional role for the Bonneville Power Administration.** The Council is calling on Bonneville to take a more aggressive role in forging regional cooperation. The Council particularly points to the need for Bonneville to develop a predictable rate for new resources so that investor-owned utilities will have an incentive to turn to Bonneville for power as an alternative to developing more expensive resources on their own.
- **Developing conservation on a regional basis.** This involves sharing of conservation costs and benefits among utilities.
- **Strategies to make better use of the hydropower system** (see "resource portfolio").
- **Building conservation capability in all sectors.** While there is a current surplus of power, the Council wants conservation programs to be developed and tested so that they can come on line when they are needed.



- Demonstrating the cost effectiveness of renewable resources (wind, geothermal, solar) so they will be available before the region has to build new thermal generating resources.
- Allocating costs of two unfinished nuclear plants and removing barriers to their preservation and completion.
- Studying electrical power sales and purchases between regions.

The Council's planning strategy

The plan includes a forecast range of future electrical power needs in the next 20 years (see Figure 2) and a portfolio of new electrical energy resources to meet those needs. The portfolio of new resources details the types and amounts of resources that will be needed, and provides a schedule for bringing those resources into service to meet the Northwest's growth.

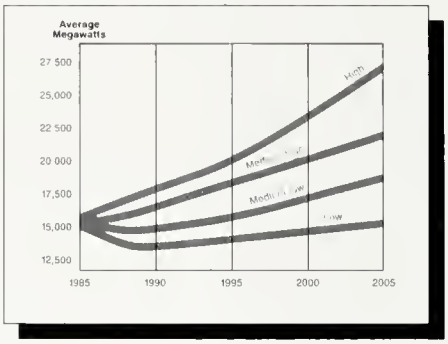


Figure 2
Demand Uncertainty

To minimize the risk of either under- or overbuilding resources, the Council uses a range of forecasts from low to high growth, rather than a single forecast. Because the resources selected are flexible, they can be developed in increments and brought into service at different times, depending on where growth falls within the forecast range. Under the Council's plan, the region should be prepared to meet any change in electrical use over the next 20 years.

At the low end of the forecast range (annual demand growth rate of 0.2 percent, see Figure 3), the region would continue with a power surplus over the next 20 years, and conservation could meet all the region's new electrical energy needs. At the high end of the range (annual demand growth rate of 2.7 percent), the region would consume the surplus by 1990, when it would need new resources.

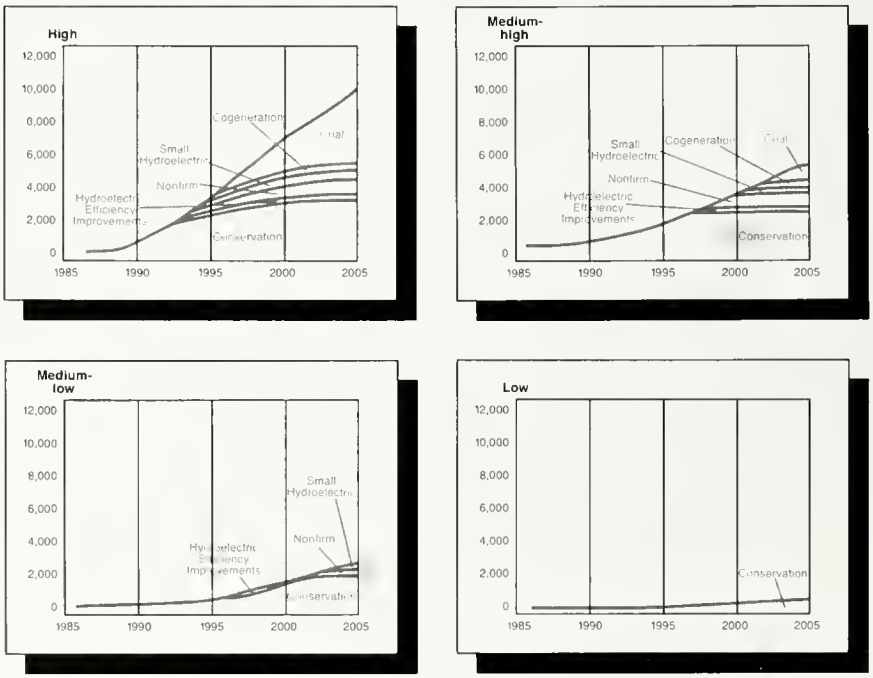


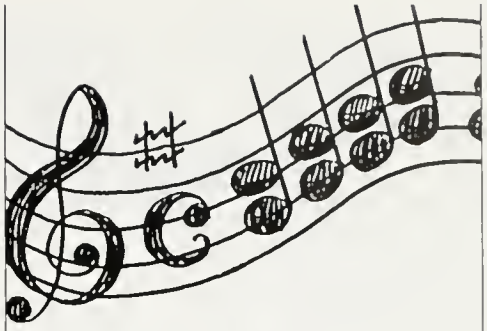
Figure 3
Regional Resource Schedule

The Council is calling on Bonneville to take a more aggressive role in forging regional cooperation.

With extreme high growth, the region could need as many as 12 new coal plants at the end of the 20-year planning period. Where the region falls between these two extremes will depend largely on its economic growth. The range represents an 11,000 megawatt spread between the two extremes. (The city of Seattle uses 1,000 megawatts.)

The Council's power plan places heavy emphasis on managing risk in order to protect the Northwest's energy supply and to reduce the costs to ratepayers. On one extreme, the risk is an inadequate supply of electricity. The risk on the other end of the spectrum is overbuilding thermal resources (coal and nuclear plants) so that ratepayers are paying for expensive electricity they do not need.

The Council's power plan emphasizes energy conservation, flexible resources, and resource "options" to minimize risk. For example, resources that can be developed in increments or resources with shorter lead times to build are preferred because they can match electrical energy needs more closely. The options concept gives energy planners two decision points before they commit huge sums of money to construct a new resource. A resource can be taken through the relatively inexpensive but time-consuming stages of design, siting and licensing, then held in reserve as an option until the need for it is established. When it is needed, construction can begin. If it is not needed, it can be delayed or terminated.



The resource portfolio

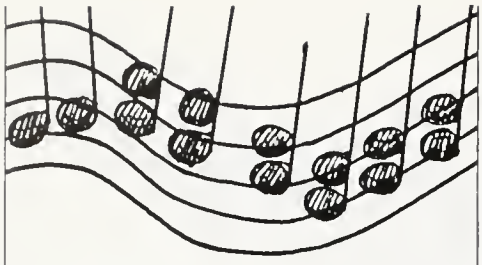
To be included in the portfolio, a resource must be available, reliable, and its environmental impacts must be controllable and acceptable. New resources are brought on line in a specific sequence as the region's power demand grows. The most cost effective are used first and are listed in that order. The megawatt figures following each resource indicate the total amount of that resource the Council has identified as available and reliable in the highest power demand forecast. Lesser amounts of the resource would be used for lower growth in demand.

Conservation: 3,900 megawatts — The Council treats conservation as the equivalent of a generating resource because each megawatt of energy saved is a megawatt that need not be produced to serve Northwest electrical power needs. Less conservation is available with lower growth because fewer new buildings are constructed. Conservation is called for in all sectors: residential, commercial, governmental, industrial and agricultural. The model conservation standards for new buildings, if adopted regionwide, would take care of all the region's new electrical power needs if growth falls along the low end of the forecast range.

Better use of the existing hydropower system: 700 megawatts — Energy planners estimate the amount of hydropower available based on an historic low water year (called the critical water standard). The hydropower produced up to the critical water standard is called firm power because it can be counted on. But an average water year produces a third more power, and good water years can nearly double the hydropower available. This additional hydropower is called nonfirm power because it depends on the weather. Currently it is sold, but the income is less than it will cost to build new thermal plants when the Northwest needs more power.

The Council has identified a portion of nonfirm power (700 megawatts) that could be cost effectively "firmed up" (backed up with other power sources) to meet the Northwest's firm power needs. Because the surplus provides time to plan, the Council is calling on the region to explore strategies to expand the use of the Northwest's existing hydropower system, which produces electricity at a fraction of the cost of electricity generated at new thermal plants.

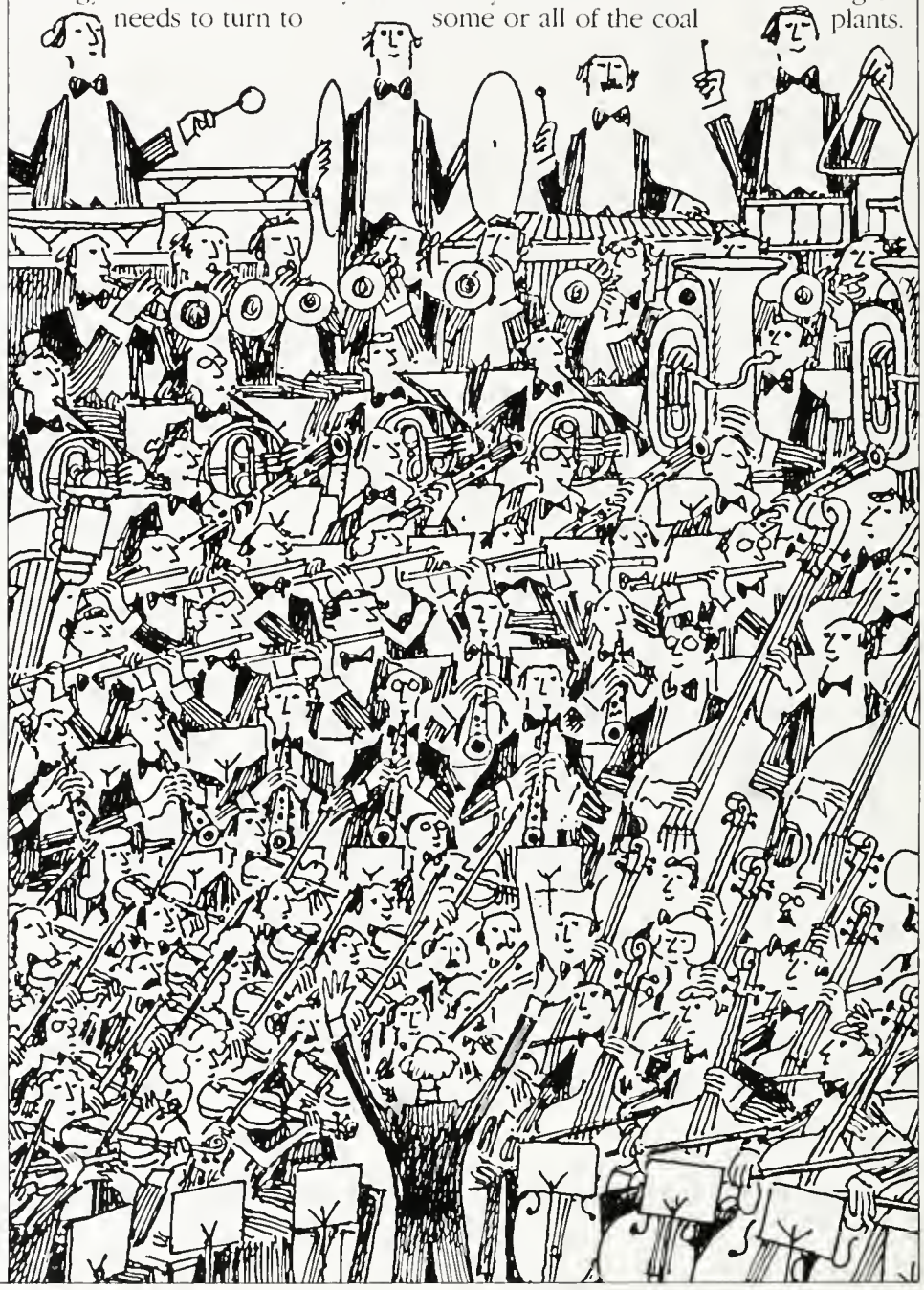
While the Council is not recommending a particular strategy at this time, possibilities include using combustion turbines, short-term power purchases from Canada or other parts of the U.S., or load-management policies to more closely match the region's power loads with the output of the hydropower system.



Hydropower: 200 megawatts — The Council has included only new hydropower available through improvements and upgrades at existing hydropower sites. No new sites will be included until the Council completes a detailed study to identify potential hydropower sites and rank their impact on the environment. This study will be used to designate areas that should be protected.

Cogeneration: 320 megawatts—Cogeneration is the simultaneous production of electricity and other useful heat energy from a fuel source. Often, it involves the recovery of "waste" energy from various industrial and commercial applications. This energy is typically used for industrial processes or space heating applications. There is considerable uncertainty over the amount and cost of the cogeneration potential in the region, and the Council based its estimate on a survey of Northwest industrial companies conducted by the Pacific Northwest Utilities Conference Committee.

Coal: 5,425 megawats (12 plants) — This is the last and most expensive resource to come on line and would be used only if high growth made it necessary. (Using all 12 plants would require unprecedented high growth.) In its plan, the Council calls for intensified research and testing of renewable energy resources so that they can be ready and cost effective before the region needs to turn to some or all of the coal plants.



Changes from the Draft Plan

by Steve Engel

The Council made a number of changes in the 1986 Power Plan as a result of public comment received on the draft plan.

Says Ed Sheets, executive director of the Council, "We've made some valuable discoveries in the course of publicly examining the draft plan. Several numbers changed when we took another look at our assumptions."

Most significant changes from the draft plan concern the cost effectiveness and availability of electrical generating resources. The changes are due primarily to the use of more recent information. Briefly, these changes are as follows:

- Coal-generated electricity is projected to be 20 percent cheaper in the final plan.
- Preserving two nuclear plants has half as much—though still considerable—expected value. This reduction is tied to the lower cost of coal-fired power (see explanation below).
- Only one-third as much nonfirm hydropower can be cost effectively converted to firm power—700 megawatts in the final plan versus 2,000 megawatts in the draft. The new coal price had an impact on the use of combustion turbines in this strategy. (Nonfirm hydropower is energy in excess of guaranteed service and reservoir refill; the amount available varies with rainfall and snowpack. Combustion turbines are small facilities that burn oil or gas to turn electricity-generating turbines.)
- The final plan calls for less new hydropower, recognizing that about 55 megawatts cited in the draft have already been developed.
- Public comment pointed out that less cogeneration will be available if lower economic growth slows industrial activity. Cogeneration uses waste heat from industrial processes to generate or replace electrical energy. The Council has now planned for varying amounts of this resource.

"Good, sound information from the public definitely helped improve the plan."

- The Action Plan (see related story) now specifies expanded efforts to research, develop and demonstrate promising renewable resources. One such action is increased funding by the Bonneville Power Administration to confirm a 100-megawatt geothermal resource.
- The Council raised its estimates of potentially available geothermal energy, and lowered the cost of wind power. Although neither resource is included in the resource portfolio, both moved closer to meeting the cost-effectiveness limits for inclusion.
- The Action Plan now calls for the region to secure an option on a 500-megawatt resource if the regional surplus decreases by 1,000 or more megawatts, averaged annually. Such an option would allow the region to respond more quickly to a large surge in demand for electricity. (Optioning allows a resource to be taken through the time-consuming but relatively inexpensive stages of licensing and design, and then be held until need dictates construction. It reduces the time involved in meeting new electrical demand, and it lowers the risk of committing to a large project before need is established.)
- In response to utility suggestions, the Council ran studies of what would happen if events turn out differently from the plan's basic assumptions. These "sensitivity studies" explore the cost impact if some resources prove less available than supposed, or if different start-up dates and demand levels occur.

"It is possible to make and use plans that have no relationship to the world as it really is," says Council Chairman Bob Saxvik. "The best way to go wrong is to pick one number and ride it to death, without ever examining it. You remember the old forecasting methods that tried to balance all the eggs on a single line."

Among the factors that can separate a plan from reality, according to Saxvik, are "choosing resources on the basis of closed decision making, limited information and narrow interests."

The Council's open process works directly against those kinds of errors, Saxvik argues. He points out that the Council exposes all of its methods, data and conclusions to regionwide critical review. "Good, sound information from the public definitely helped improve the plan."

Interlocking numbers: a case study

To the extent that they are available, reliable and environmentally benign, cheaper resources are used before more expensive ones in the Council's plan. The value of using one resource instead of another is based on a comparison of their costs. In a move that lowered the amount and value of several other resources, the Council reduced its estimate of the cost of coal-generated electricity about 20 percent—from 5.2 cents per kilowatt-hour to about 4.2.

In high growth cases, the region is now projected to need more coal plants, because the plan includes less nonfirm energy than before. In large part, most nonfirm strategies in the draft plan dropped out because they are now more expensive than coal (see below).

These new coal figures have also reduced by half the likely value of preserving two unfinished nuclear plants—Washington Public Power Supply System Nuclear Projects 1

and 3 (WNP-1 and WNP-3). (See related story.)

Coal is the most expensive resource in the Council's resource portfolio; to be included, any resource must cost the same or less. Coal's new price resulted from changes in the assumptions regarding coal plant financing, tax treatment, plant lifetime and the value of out-of-region sales of electricity.

Several utilities noted that coal plant developers would get more favorable borrowing terms than the draft plan assumed, because of the likelihood that Bonneville would back the financing of such projects and acquire their output. Bonneville's involvement would spread the cost and risk, encouraging less expensive loans.

Tax benefits for coal plants allow developers to defer (avoid) some income taxes on revenues from the project. The draft plan calculated the cost reduction due to these tax terms, but it did not take into account that these savings would also reduce revenue requirements, and would therefore likely keep down electricity rates.

The Council also found that new coal plants could be expected to operate a full 40 years, thus increasing the value of the plants by further lowering the cost of the electricity they produce.

Finally, Bonneville advised that net revenues should be slightly higher than in the draft plan, because California utilities would be willing to pay higher prices in the long run for Northwest power. As a result, Northwest ratepayers would have to pay less of the plants' cost.

The value attributed to the two Washington nuclear plants reflects the difference between the cost of preserving, finishing and operating those plants and the cost of building and operating new coal plants that could generate the same amount of electricity. When the Council reduced its estimates of coal plant

CHANGES IN RESOURCE PORTFOLIO

Resource	1983	Draft	1986
		(average megawatts)	
Conservation (total)	4,790	3,848	3,926
MCS (total)	1,470	1,097	1,190
MCS (residential)	855	622	792
MCS (commercial)	615	396	398
Manufactured Homes	0	40	35
Existing Res. Space Heat	520	402	455
Residential Appliances (a)	865	880	748
Existing Commercial (b)	735	789	802
Existing Industrial	545	530	538
Irrigation	385	155	124
Power System (c)	270	119	144
New Small Hydropower	920	255	200
Cogeneration	500	330	320
Combustion Turbines	1,050	0	0
Nonfirm Strategies	0	1,962	714
Coal (to meet high load)	2,924	4,171 (d)	5,425
TOTAL	***16,444***	***15,596***	***15,811***

NOTES: (a) This number includes water heaters. (b) This number includes governmental buildings. (c) The 1983 number includes only hydropower efficiency improvements, which are not considered conservation under the Northwest Power Act. The 1986 number includes 110 megawatts of hydropower efficiency improvements and 34 megawatts of transmission and distribution efficiency. (d) This figure has been adjusted from the draft for purposes of comparison in this chart and to reflect changes in the assumptions used to arrive at coal's contribution to the portfolio.

costs, it cut in half the price difference, and thus the potential value, of using WNP-1 and 3 to replace coal plants. The expected benefit of preserving WNP-1 and 3 drops from $1.2 billion, cited in the draft, to $630 million.

Similarly, the lower price for coal-fired electricity makes combustion turbines comparatively more expensive as a strategy for backing up the reliability of nonfirm hydropower. Although the coal price wasn't the only reason for the drop, only one-third as much nonfirm hydropower is now cost effective for the region.

"Nonfirm" hydropower is so-called because it is not always available. In years of average rainfall and snowpack, the hydropower system produces 4,100 megawatts of nonfirm electrical energy—energy in excess of what is required to refill the region's reservoirs. Most of it is sold to industries in the Northwest and to California. The 1986 Power Plan includes 714 megawatts of nonfirm hydropower backed up by small combustion turbines. This strategy would make it possible for the region to develop new supplies of reliable power more cheaply than by building new coal plants.

But combustion turbines are expensive to run, and each additional unit that must be fired up costs more than the one before. This occurs because the added unit comes on line only when less hydropower is available. When less of the inexpensive hydropower is available, the average cost of the strategy increases markedly. This improved use of nonfirm hydropower is cost effective when 80 percent of the energy comes from the falling water. Using all the turbines planned for in the draft would now push the cost of the original strategy above that for coal. The reduced amount of nonfirm in the plan is cost effective.

The draft plan counted on 1,962 megawatts from nonfirm strategies. At 714 megawatts, expected value of nonfirm hydropower is $175 million, compared to $1.2 billion in the draft.

: HIGH FORECAST

Conservation (total): The main reason the estimate decreases from 1983 is that the high load forecast is lower in the 1985 draft and 1986 final plan.

MCS: The number of new buildings is assumed to be less than in the 1983 forecast. The level of the standards remains the same as in the 1983 plan. However, the 1986 plan incorporates an amendment to the 1983 plan that provides more flexibility in how the standards may be implemented.

Residential appliances: The lower 1986 figure is due to several things. Hot water heat pumps proved to be less cost effective than originally estimated. However, refrigerator and freezer efficiencies are expected to improve as regional standards come into effect.

Existing residential space heating: The expected savings declined because of updated information on actual performance of measures, and to reflect the lower economic growth forecast, and also because homes weatherized since 1983 are removed from the 1986 potential.

Existing industrial: The Council used a more thorough study, completed since 1983. The study was based on plant managers' estimates for their own facilities.

Power system efficiency: More recent studies and inventories revised the earlier figure.

New small hydropower: The Council estimated all feasible new hydropower in 1983. The current plan includes only energy from adding facilities at existing dams, irrigation canals and flood control channels. Such projects completed since 1983 were removed from the count between draft and final plan.

Cogeneration: More detailed and specific information since 1983 lowered the draft estimate.

Combustion turbines: Combustion turbines were included in the 1983 portfolio as a planning reserve to meet large, unexpected load growth. For the draft and 1986 plans, their operation was once again analyzed, this time as a backup resource for nonfirm hydropower.

Nonfirm strategies: The Council revised its draft estimate of the resource to reflect more complete calculations of cost effectiveness.

Coal: The region could potentially use thousands of megawatts of coal to meet resource requirements under high load conditions; the actual coal energy acquired would depend on the extent to which high loads exceed the supplies of other resources.

Chart by Lynn Carson & Stephen Sasser

The higher price expected for nonfirm power sold to California also lowered somewhat the advantage of investing in its use here. A change in how the Council models hydrosystem operations had the further effect of raising the frequency and thus the cost of using combustion turbines to back up nonfirm energy.

"Combustion turbines are among the most expensive ways to firm up this energy," says Wally Gibson, system analysis and rates manager for the Council. "Other, less expensive back-ups may be available, which would increase the benefits of using this strategy. Imports from Canada and California could do the job. But their availability and price are uncertain right now."

Renewable resources

The final Action Plan outlines increased efforts to research, develop and demonstrate promising renewable resources, such as geothermal, wind and solar. If their costs can be reduced and their reliability proven, these renewables could replace some coal generation in future Council resource portfolios. Some of the environmental problems—and expenses—of coal plants might thus be avoided.

Increased geothermal estimates. The region may be sitting on top of extensive reserves of cost-effective geothermal energy, according to a four-state study completed just before the draft plan was issued. About 4,400 megawatts (equal to the output of nearly ten large coal plants) could be available for less than 4.5 cents per kilowatt-hour. The Council acknowledges this opportunity and is urging the development of programs that would confirm the resource. Until the costs and sites are confirmed, however, the Council will not include this geothermal energy in the 20-year portfolio.

Lower wind costs. Evidence submitted by the Oregon Department of Energy during the draft comment period showed that the estimated cost and performance of an actual production wind machine were better than original Council estimates based on a generic machine. As a result, as many as 6,300 megawatts of wind power may presently carry costs within 150 percent of the 4.5 cent per kilowatt-hour upper Council limit.

If their costs can be reduced and their reliability proven, renewables could replace some coal generation in future Council resource portfolios.

Conservation resources

Some conservation measures cost less in the final plan because of the way administrative costs are now applied. In the draft plan, a 20 percent overhead cost was added to every installed measure (to cover accounting, overhead and other management functions of conservation programs). Several commentors—among them, the Natural Resources Defense Council, the Northwest Conservation Act Coalition, and the Bonneville Power Administration—pointed out that roughly the same administrative costs are incurred for any group of measures installed in a structure. Adding more efficient, higher cost measures, such as air-tightening or heat recovery ventilators, doesn't increase administrative costs for any particular conservation program. Therefore, administrative costs now apply to programs as a whole but are not added to the cost of particular measures.

Comment from a number of sources convinced the Council that a program to weatherize existing residences should not be eliminated, even though the cost effectiveness of the program would be limited during a time of surplus. The plan calls instead for the program to operate at the minimum viable level needed to keep alive the staff's skills and the services of the program. The Council emphasized the need to build the capacity for developing conservation in all sectors, including low income and rental housing.

Treatment of WNP-1 and 3

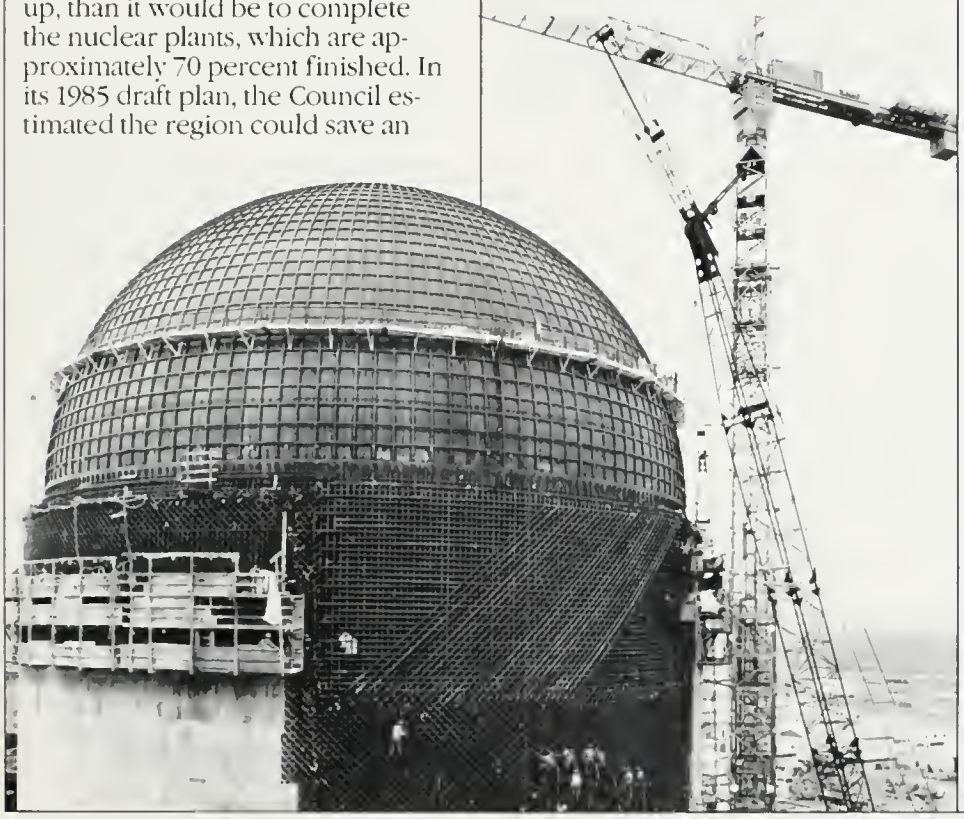
by Carlotta Collette

The Council's 1986 Power Plan includes two unfinished nuclear plants owned by the Washington Public Power Supply System (WNP-1 and 3) as cost-effective potential options. The plan calls on the Bonneville Power Administration to remove the barriers to their preservation and completion. These barriers, however, are currently so substantial that the Council voted to leave the plants out of its resource portfolio, because they were neither reliable nor available. Resources that can be depended upon replace the two plants in the portfolio. (The resource portfolio is the section of the plan that identifies what resources will be needed, in what amounts, and when, to meet future growth in power demand.)

The Council has described the plants as insurance against future power deficits. It would be more expensive to build and operate other new generating resources, such as coal plants, from the ground up, than it would be to complete the nuclear plants, which are approximately 70 percent finished. In its 1985 draft plan, the Council estimated the region could save an average $1.2 billion if WNP-1 and 3 could be kept available, and if their energy were needed. In the final 1986 Power Plan, the approximate value of the two plants dropped to an average of $630 million.

What happened to the nuclear projects between the draft and the final plan is a good case study on the way the Council chooses resources, and the value of public comment.

The Council puts together its portfolio of resources to meet the region's electrical energy needs by comparing the costs and values of all available resources, including conservation, hydropower, other renewable energy sources and thermal generating resources such as coal and nuclear. Coal is the most expensive resource considered and it becomes the outer limit, or marginal resource. Other resources must be more cost effective than coal to make it into the portfolio.



Washington Public Power Supply System Photo

During the public comment period, the Council heard testimony that affected the cost and availability of almost every resource in the portfolio. The most significant change was in the cost estimates for new coal plants.

In response to comments, the Council re-evaluated the assumptions used to calculate the price of coal (see related story, page 13). This caused the price of coal from plants built in the year 2000 to drop from 5.2 cents per kilowatt hour to 4.2 cents. Since the value of the two Supply System nuclear plants is directly related to the value of the highest priced resource in the portfolio—coal—the drop in the coal cost also lowered the average value of the two plants—from $1.2 billion to $630 million.

But saying that the two plants will produce a saving of $630 million if they can be preserved and used does not fully describe the value of the plants to the region. The true value of the plants depends on the level of growth the region can expect to undergo in the next 20 years and the costs of preserving and completing the plants.

The figure $630 million is an average of hundreds of possible outcomes. Under some of these scenarios, the region's demand for electricity grows rapidly and the plants are needed to displace higher cost new coal plants. In these scenarios, the plants save the region $1 to $3 billion, depending on how soon and how many of the plants are needed.

In lower load growth scenarios, neither plant is needed. Under these circumstances, the Council assumed preservation would be at the minimum level provided by the Supply System—$24 million per year for the two plants. Such preservation for 15 years will cost the region about $300 million. If the plants are not needed, the region will be out that $300 million.

The Council based its evaluation of the nuclear projects on the following set of assumptions. *If* preserving the plants costs $24 million each year, and *if* the plants can be held for up to 15 years and be restarted only when there is expected need for the output from the plants, and *if* the plants perform as well as it is expected they can, then the benefit to the region will be about $630 million (see Figure 4).

If the costs of preserving the plants go up without a substantial reduction in the costs to complete the plants, their value as potential options drops. Doubling the costs to preserve the plants also doubles the potential liability and consequently the risk involved in keeping the plants.

During the comment period on the draft, the Council was asked to analyze the possibility of setting a specific date for restarting one or both of the power plants. After its analysis, the Council concluded that if preservation is planned with a scheduled, or forced, restart date in 1989, the plants' value to the region would be only about $100 million. That value remains about the same through 1996 (see Figure 5).

If, on the other hand, the start-up date is allowed to float until the plants are needed, the value of completing one plant (assuming the plant can be preserved up to 15 years) is about $440 million. The value of the second plant is less than the first, because it is only needed in the highest load growth case. The combined value of the plants, if both are needed, rises to $630 million.

All of these variables led to the Council decision to leave the plants out of the resource portfolio until and unless they can be shown to be needed to meet regional electrical load growth, and can be cleared of the uncertainties that surround them.

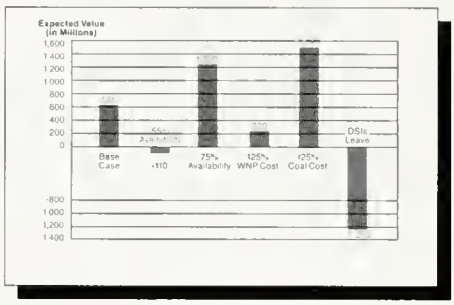


Figure 4
Effects of Variation in
WNP-1 and WNP-3
Planning Assumptions on Value

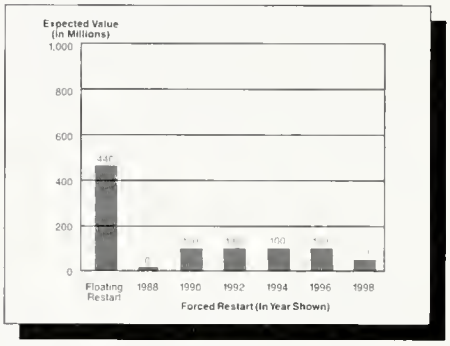


Figure 5
Value of Floating Restart vs. Forced Restart

This Plan Calls for *Action*

by Jim Nybo

Many people, on seeing the 1986 regional power plan with its forecasts, economic studies and resource portfolios, will ask, "What happens next?" These readers should turn to the Action Plan. It is the easiest section of the plan to find because the page edges are marked to stand out. It may also be the easiest to understand because it sets forth immediate objectives along with activities designed to achieve them.

A flexible process

The 1986 Action Plan differs in two principal ways from the 1983 version. First, it gives much more flexibility to the Bonneville Power Administration. Rather than exhaustively specifying actions to implement the plan, the Action Plan calls on Bonneville to develop detailed work plans to achieve regional objectives. Bonneville has stated it will cooperate with the Council in this process, and will consult with the Council and other interested parties in the region as it develops the work plans.

Emphasis on regional cooperation

Second, the 1986 Action Plan recognizes that many other regional institutions in addition to Bonneville and the Council will need to be involved if the region is to realize the benefits offered by the plan.

Although virtually every person and institution is potentially on the Action Plan list, key actors would certainly include: the Bonneville Power Administration; public utilities; investor-owned (private) utilities; state and local governments (including utility regulatory commissions); and industrial and other utility customers.

As part of the emphasis on cooperation, for the first time there is a special section providing recommendations to the region's utility regulatory commissions and investor-owned utilities. This is a critical component of the strategy to address the power resource imbalance between the public and private utilities.

Dealing with the surplus

The Action Plan sets forth a two-part strategy for dealing with the regional electrical power surplus. First, the Council believes the appropriate regional strategy is not to aggressively acquire those new power resources today that would aggravate the surplus. Second, the Action Plan calls for taking prudent steps to prepare for the time when additional power will be required. Those steps include 1) acting now to capture lost opportunity resources, and 2) developing and maintaining the capability to conserve electricity and develop new power resources, when needed.

Lost opportunity resources are cost-effective resources which, if not purchased today, could be lost forever to the region. The primary example is the model conservation standards, which call for energy saving measures in new residential and commercial structures at the time they are built.

Having the capability to conserve or develop electrical resources means developing and testing programs so they will be available when needed, generally stopping short of actually acquiring the resource. Maintaining existing capability may require operating a functioning program at the minimum level at which that capability can be sustained.

Action Plan highlights

The following are highlights of the course the Council has charted for the electrical power system of the Pacific Northwest.

- Achieve cost-effective energy savings in new residential and commercial buildings through the Council's model conservation standards—as building codes, through utility marketing and financial assistance programs, or through alternatives that achieve equivalent energy savings.
- Reduce the size of the residential weatherization program to the minimum viable level.
- Encourage states to adopt residential appliance efficiency standards for refrigerators, freezers, and hot water heaters.

The Action Plan calls for taking prudent steps to prepare for the time when additional power will be required.

- Continue state and local government programs to implement the regional power plan, including consultation, technical and financial assistance, solar access protection, education and training, and conservation in institutional buildings.
- Develop policies and procedures that will enable the region to secure and exercise options on power resources.
- Develop a process to acquire new resources. That process should be designed to develop cost-effective priority resources, capture lost opportunity resources, and develop the capability to acquire conventional resources. Critical to this process is a clear policy to establish prices the region will pay to acquire new resources, and rates that utilities will be charged to purchase from the new resource pool.
- Expand research and development on renewable resources such as geothermal, wind, and solar power so that they can be available and cost effective before the region has to turn to new thermal power.
- Use access to the federal intertie transmission lines to encourage regional cooperation in achieving the benefits of the plan.
- Develop an agenda for research, development, and demonstration efforts necessary to implement the regional plan.
- Carry out a West Coast Energy Study to explore mutually beneficial cooperative agreements among utilities in the Northwest and in connected regions.
- Encourage the region's public utility commissions and investor-owned utilities to consider actions to aid in developing the most cost-effective resources first, including: capturing lost opportunity resources; developing a consistant avoided cost policy for new resources; building conservation capability in the commercial and industrial sectors; and developing consistent incentive-based programs for efficient new manufactured housing.

In The News

Governors name two to Council

Two new members have been named to the Northwest Power Planning Council. Former U.S. Representative Robert Duncan was named by Oregon Governor Vic Atiyeh to replace Roy Hemmingway.

Tom Trulove, the Council's first member from eastern Washington, was appointed by Governor Booth Gardner to replace Chuck Collins. (Washington recently passed legislation calling for one of its Council members to represent the eastern side of the state, and the other the west side.)

Collins and Hemmingway were charter members of the Council. Collins left to chair the Washington State Board of Higher Education, and Hemmingway, who asked not to be reappointed, announced plans to return to private life.

Duncan served in the U.S. House of Representatives from 1963 to 1967, representing Oregon's Fourth Congressional District, and from 1974 to 1980, representing the Third District.

After retiring from Congress, he became the Washington, D.C. based partner of the Portland law firm of Schwabe, Williamson, Wyatt, Moore and Roberts.

While a member of Congress, Duncan was involved in the legislative activities that culminated in the Northwest Power Act, which authorized the creation of the Council. With his appointment, he says, he's been given "a chance to do what Congressmen are rarely able to do—to take the words I helped write and actually put them into practice."

Robert Duncan

Duncan is also a longtime friend and frequent ally of John Dingell, the Michigan congressman who was instrumental in adding the fish and wildlife provisions to the Act. Influenced by this friendship, Duncan adds that he is "very interested in seeing that commitments made on the fish and wildlife side of the Council's work are fulfilled."

Trulove describes his former job—mayor of Cheney, Washington—as "lots of fun." Recently elected for his third term, he highly recommends being a small town mayor to anyone who wants great work. Having to resign as mayor was the toughest part of taking the Council position, he reports.

Trulove is taking a leave of absence from his other job—professor of economics at Eastern Washington University—in order to join the Council.

"No one is capable of replacing Chuck Collins," Trulove says. "Yet each of us brings our own strengths to the Council. As mayor, I had a great deal of experience with listening carefully to people before making decisions, and I intend to use the same approach while on the Council. People should know that I'm always a sucker for good, reliable facts and the logical argument."

Like Duncan, Trulove is no stranger to the Council, having served on its Scientific and Statistical Advisory Committee during the development of the first power plan. He has also been president of the energy committee of the Association of Washington Cities—an organization with which the Council works closely.

Tom Trulove

Both men were appointed for three-year terms and are subject to approval by their state legislatures. —*RC*

Carlotta Collette Photo Trulove · Oregonian Photo Duncan

Western Montanans favor efficient homes

Energy consumers in western Montana think the best way to save energy is to build more efficient new homes, according to a survey conducted by the Bureau of Business and Economic Research at the University of Montana.

The survey was commissioned by the Montana office of the Northwest Power Planning Council to measure public awareness and sentiment concerning current and future electricity needs in that state.

Survey participants were given a list of conservation efforts to choose among. One-third of the respondents wanted to see requirements that new homes be built in ways that make them energy efficient. Weatherizing older homes was their second choice.

When asked whether they would be willing to pay more for an energy efficient house, 63 percent said yes. Almost two-thirds wanted Montana to require conservation measures in new construction.

The survey reached 302 Montanans, throughout all 19 Montana counties west of the Continental Divide (the boundary of the Bonneville Power Administration service area). Because of the small sampling, the margin of error is estimated to be about six percentage points in either direction. —*CC*

In The News

Portland building first start toward "Energy Edge"

Calling it the "Olympics of energy efficiency," Oregon Governor Vic Atiyeh, on January 23, launched the Northwest's "Energy Edge" competition for conservation in commercial buildings. The competition was inaugurated in the historic landmark Montgomery Ward Building in Portland, Oregon.

Renamed Montgomery Park, the massive building being renovated by Portland developers Sam and Bill Naito, is the tenth largest in the Pacific Northwest. Energy savings from conservation measures in the 782,900 square foot, nine story building are expected to average over $186,000 each year.

Portland Energy Conservation, Inc., a not-for-profit corporation that develops innovative energy conservation programs in the Pacific Northwest, and the Oregon Department of Energy are co-sponsors of this first in a series of 34 demonstrations of the potential of energy conservation in commercial buildings.

The four-state, $8 million program is funded by the Bonneville Power Administration. The Energy Edge competition will pay building owners the added cost of including energy efficient features in new or significantly renovated commercial buildings in the region. Payments will cover additional design time; increases in construction costs over conventional buildings; computer modeling of the building's energy performance; and administrative costs of the program.

Artist's rendering of Montgomery Park Building renovation.

Participants in the program will also receive technical assistance in energy efficient design and construction techniques. Buildings in the competition are expected to use 30 percent less electrical energy than current construction.

The competition is open to owners, developers, architects, or engineers who have a commercial building in the design or planning stage. Since the program is particularly concerned with saving electricity, preference will be given to buildings that rely on electricity as a primary heating and cooling source. Offices, hotels, motels, grocery stores, retail outlets, restaurants and warehouses in Idaho, Montana, Oregon and Washington are all candidates for selection.

For more information about the competition, or to obtain an application, contact the Energy Edge representative in your area.

In Washington: Washington State Energy Office, 400 East Union, Olympia, Washington 98504, (206) 754-0768. In Idaho, Montana, or Pacific Power & Light's service areas in Washington: Pacific Power & Light, Room 440 PFFC, 920 Southwest Sixth Avenue, Portland, Oregon 97204, (503) 243-3069. In the Portland metropolitan area (including Multnomah, Washington and Clackamas counties in Oregon, and Clark County in Washington): Portland Energy Conservation, Inc., 2950 Southeast Stark, Portland, Oregon 97214, (503) 248-4636. In the rest of Oregon: Oregon Department of Energy, 102 Labor and Industries Building, Salem, Oregon, 1-800-221-8035.

—CC

FERC decision calls for protection for future fish runs

The Federal Energy Regulatory Commission (FERC) has determined that Rock Island Dam, the oldest dam on the Columbia River, will have to be operated with an eye to protecting future, as well as existing, fish runs.

The FERC decision followed a hearing in which the State of Washington Departments of Fisheries and Game, the Oregon Department of Fish and Wildlife, the U.S. National Marine Fisheries Service and the Confederated Tribes and Bands of the Yakima Indian Nation argued for increased fishery protections in the six year old "Mid-Columbia Proceeding."

The Northwest Power Planning Council, the National Wildlife Federation and the Confederated Colville Tribes were intervenors on behalf of the petitioners.

The "Mid-Columbia Proceeding" refers to the five dams on the Columbia River just below Chief Joseph Dam. These dams, all owned and operated by public utilities, were the subject of litigation because, according to the petitioners, they failed to adequately protect juvenile fish attempting to migrate past the dams to the ocean.

FERC, licensor of non-federal dams, ordered the hearing, which was held last summer. Last spring, the parties reached agreement on four of the five mid-Columbia dams. Rock Island was the exception.

H. Naito Properties Illustration

In The News

The new FERC decision establishes interim fish protection procedures for the Rock Island project. First, additional studies must be conducted by the dam's operator, Chelan County Public Utility District, to quantify juvenile fish mortalities, both in the reservoir behind the dam and at the dam itself.

These studies should help determine Chelan's responsibility for long-term mitigation and compensation for the lost fish. ("Mitigation," according to the FERC judge, refers to efforts to *prevent* fish losses in the existing run. "Compensation" is the addition of hatchery-produced fish to the existing run to replace those losses which cannot be avoided.)

The FERC decision goes on to say, "Chelan must do more than 'compensate' for Rock Island's damage to the current run; it must also make efforts to enhance future runs." Citing the Northwest Power Act, FERC ruled out Chelan's premise that a cost-benefit analysis justified their not carrying on additional mitigation after 1987.

The "equitable treatment" language in the Act, FERC noted, "suggests fisheries and power production on the Columbia River should not be balanced solely by a cost-benefit analysis."

The costs of protecting the existing and future fish runs are relatively small, FERC concluded, when compared to the long-term benefits of sustaining those runs.

—*CC*

COMMENT INVITED ON HUNGRY HORSE DAM WILDLIFE MITIGATION PROPOSAL

The Northwest Power Planning Council is seeking public input before making a decision on a proposal to offset the damage done to wildlife by Hungry Horse Dam in northwestern Montana. The proposal has been submitted to the Council by the Montana Department of Fish, Wildlife and Parks.

The mitigation proposal would provide for habitat enhancement and protection projects to help such animals as elk, mule deer, grizzly and black bears, waterfowl, bald eagles, and furbearers (e.g., beavers and bobcats). These animals have suffered habitat and/or food losses as a result of the construction and operation of Hungry Horse Dam.

The Council's Columbia River Basin Fish and Wildlife Program calls for the development of this type of mitigation plan for a number of hydroelectric projects in the basin. The plans are to be developed by the appropriate fish and wildlife agencies, Indian tribes, the Bonneville Power Administration, and the project operators.

The Hungry Horse mitigation plan is the first such proposal to be submitted to the Council for review. As such, it raises several policy questions about the wildlife program that must be addressed before a decision is made.

These questions include: What is a reasonable way to determine which portion of wildlife losses can be attributed to hydropower when the dam in question serves multiple purposes? Should the same approach be used for all projects? Is full redress for wildlife losses caused by past hydropower development the intent of the Northwest Power Act?

An issue paper on the subject is being distributed for public comment. Comment is being taken through March 21, 1986. For a copy of this paper, use the order form on the back cover or call Judy Allender at the Council's central office. —*RC*

The "Super Good Cents" campaign to encourage energy efficient home construction that meets the model conservation standards kicked off this spring with television, radio, newspaper and magazine advertisements. Stressing the advantage of building new homes now, while the interest rates are low, the advertising push is intended to reach markets in all four Northwest states: Idaho, Montana, Oregon and Washington. The advertisements feature an easy-to-remember toll-free number (1-800-228-CENT) consumers can call for more information.

A Map of Values
Hydropower Assessment Study Takes Shape

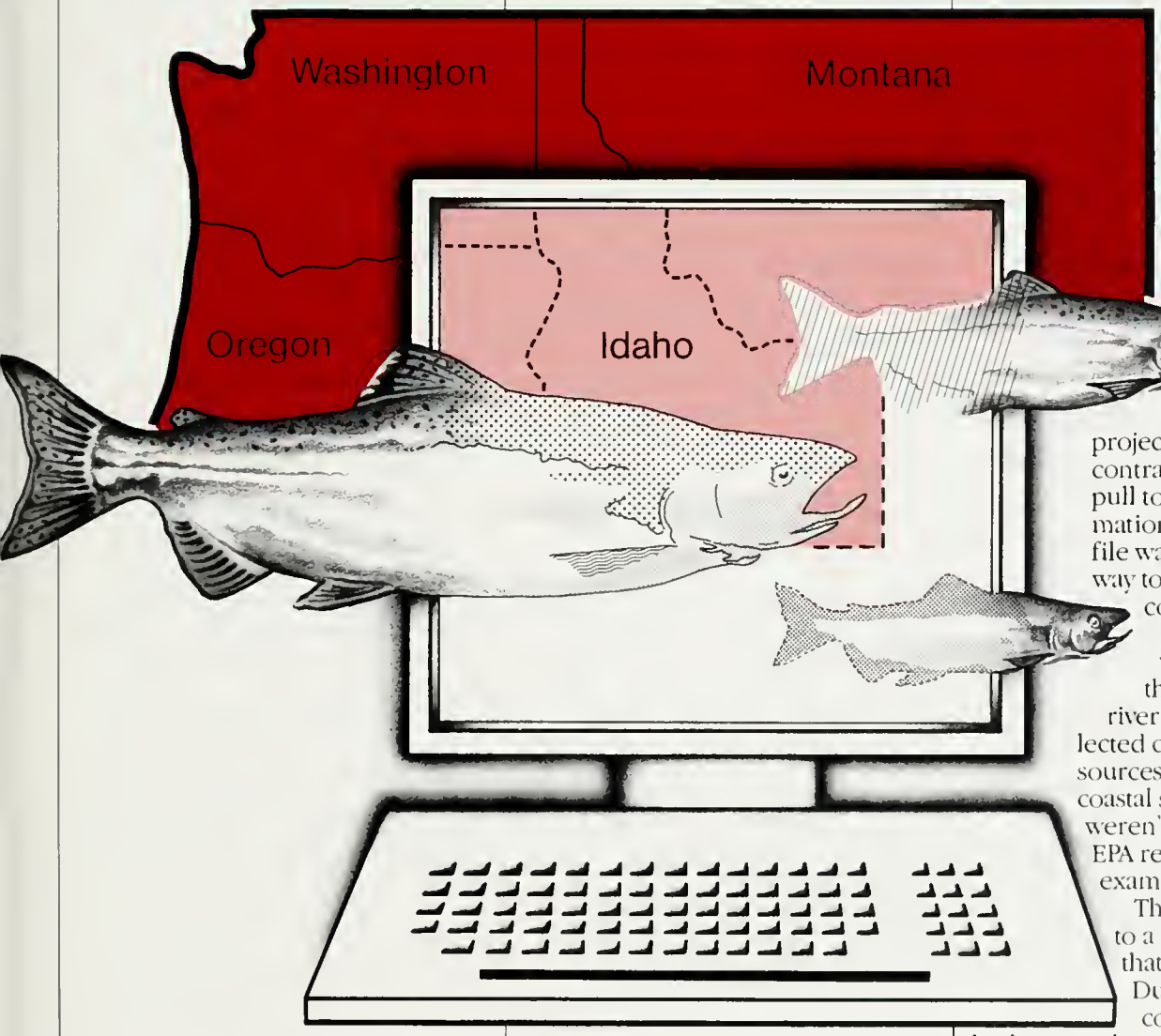
by Carlotta Collette

The map in the corner office shows a filigree of lines that concentrate and thin out in seemingly random patterns. The boundaries of the region are on it, and, with guidance, it becomes clear that concentrated lines emerge where the Cascades and Rockies turn loose thousands of streams with their runoff. Where the lines on the map thin out, the rain shadow of the Cascades has left the high plains dry. The map shows nothing else, just 21,000 pieces of river, known as stream reaches, and the perimeters of the Northwest region.

The map represents the data file of river reaches that was assembled by the Environmental Protection Agency (EPA) to chart the route of pollutants in water. It is posted in the corner office where four people are using it, and the data base it represents, as the core of a study of the 350,000 miles of year-round streams in the Pacific Northwest—the regionwide Hydropower Assessment Study.

The Hydropower Assessment Study has three key components: collection of available data on the anadromous fish (primarily salmon and steelhead trout) in the region; collection of data on other fish and wildlife resources and recreational, cultural or historical values that apply to rivers in the region; and a compilation of Indian religious, cultural or historical resources that must be protected from development.

The Northwest Power Planning Council is conducting the first and last of these studies, and combining data from all of them into one usable data base. The Bonneville Power Administration is coordinating the four Northwest states' participation in the remaining study—the Pacific Northwest Rivers Study.



The EPA map and file figure prominently in the anadromous fish portion of the work. "The EPA system gave us stream reaches from one confluence to the next," explains Jack Damron, project manager under contract to the Council to pull together the information. "The EPA reach file was a cheap [free] way to get a lot of already computer coded material fast, but we found thousands more river reaches as we collected data from other sources. More than 2,000 coastal streams in Oregon weren't included in the EPA reach file, for example."

The base map refers to a data file of locaters that link river reaches. Duane Anderson, the computer-wise biologist and unofficial linchpin on

Lynn Carson Illustration

A Map of Values

Damron's team, is adding new information that will couple the geographic records to information about where the fish actually are; how abundant they are; the history of fish catches in each stream reach; hatchery production in a given area; habitat condition and availability; and the counts of fish passing each of the major hydroelectric dams in the system.

This effort will make the data base useful for another study the Council is conducting in conjunction with its goals study for the Columbia River Basin Fish and Wildlife Program. When this work is completed, the computer will be able to estimate the production potential of any recorded stream reach in the basin. This will help the Council develop production alternatives for the program (see goals update, page 26).

When this work is completed, the computer will be able to estimate the production potential of any recorded stream reach in the basin.

But the primary goal of this elaborate choreography of information is to create a comprehensive data base that can be used to assess the effects of developing any of these river reaches for hydroelectric generation. Before any new dams will be constructed, planners will be able to locate all the stream reaches above the proposed site, and estimate the fish and wildlife of that specific area. With such information, the Council can specify which areas must be protected from hydroelectric development for fish and wildlife purposes.

With these distinctions and additional recreational, historical tribal and other considerations in hand, the Council will be better able to estimate exactly how much future hydroelectric development the Northwest can count on to meet its electrical needs over the next 20 or more years.

To reach that goal, Damron's team, Bonneville and the states must first collect the findings from each state and incorporate them into the data base the team is building. Unfortunately, each state's information is coded differently—often several different codes are used even by the same state. None of the states' data automatically corresponds to the data already in Damron's offices.

In the Oregon rivers study, for example, 14,300 stream reaches were mapped and categorized as to the quality of each reach for non-anadromous fish and wildlife purposes. The work relied, for the most part, on existing maps and assumptions. Because of time constraints built into the project, the Oregon researchers found themselves setting values for reaches by gathering around maps of subbasins; listing whether they thought a given stream had outstanding, substantial, moderate, limited, unknown or an absence of resources; and then checking their assumptions against staff in the field or other records that were available.

This ranking does not necessarily match that done for rivers in Idaho, Montana or Washington. Nonetheless, the information must somehow fit into the data base with the findings from the other states. Recreational and scenic values were determined in similar ways, and are also in need of integration.

In Washington, white water boating groups and others contributed maps and additional details they had compiled for their constituencies. A panel representing recreational users of the rivers reviewed the findings of the Washington groups. Much of this information is, by its nature, subjective. Yet the final data base has to be able to incorporate the opinions from Washington, as well as those from Idaho, Montana and Oregon.

Somehow, Duane Anderson must make sense of all the information the states and the Council are ferreting out. When he first gets to talking about the growing data base, he lights up and becomes effusive. "We can now pick a stream anywhere in the region," he explains. "We will be able to tell stream length, width and presence or absence of fish by species. We can then estimate the habitat available at low flows for fish production. We will also use the amount of habitat we find there to estimate the potential productivity of the stream."

Anderson's catching enthusiasm wanes slightly as he begins to describe the remaining tasks. "All of that just represents the beginning of our anadromous fish data entry," he notes. "The other part of the evolution of this thing is to work all the cultural, recreational, institutional, wildlife and non-anadromous information into the system. We need to cross-reference the stream numbering systems used by the states to the EPA reach numbering scheme used in our data base. That will take a considerable amount of reformatting and laborious data entry, but it will allow us to keep all the data in a compatible format."

From Damron's perspective, the project will give some regional consistency to the states' data. "We want to put all the available data into one data base, so each organization that needs it will be able to use it. The states," he adds, "have developed their own systems to serve their needs. We're just connecting them all. The information will still serve each state independently, but it will also serve to link the states."

Shorts

Idaho's bald eagle population may benefit thanks to kokanee releases from a new hatchery on the Clark Fork River near Lake Pend Oreille. Biologists estimate that the number of eagles could increase from the present 60 to several hundred because the hatchery creates a major new wintering area for them. Eagles feed on adult kokanee while migrating south. Idaho Fish and Game Department biologists plan to band or tag a number of the birds with radio transmitters to map their movements and preferred habitat. Washington Water Power Company and the Bonneville Power Administration shared in construction of the hatchery. (Source: BPA, Media Relations Office-ALM, P.O. Box 3621, Portland, OR 97208)

Some 40 Northwest sites hold potential for wind power, according to a report released by the Bonneville Power Administration. The Oregon State University Department of Atmospheric Sciences collected data from 350 places throughout the Northwest to help determine promising sites for developers. The data, which took five years to compile, have been published in the three-volume "Pacific Northwest Wind Regional Energy Assessment Program." For more information, call John Geyer at (503) 230-5327 or write him care of BPA, Routing PRS, PO Box 3621, Portland, OR 97208.

The most frequently asked energy question is about recommended levels for home insulation, according to the Washington Energy Extension Service, which operates a "Home Clinic" for consumer questions. The next most frequent questions, in descending order, involve how to get rid of window moisture and wall mildew, what chemical chimney cleaners are effective, should crawl space and attics be vented, and how to tell if furnace ductwork contains asbestos. "Home Clinic" appears weekly as a column in the *Seattle Times.* (Source: Washington State Energy Office Dispatch, January, 400 East Union, Olympia, WA 98504)

Tribal rights to hatchery fish have been confirmed by the Supreme Court. The Court let stand a decision giving treaty tribes the right to catch up to half of the fish produced in Washington State hatcheries. The Washington State Department of Fisheries had argued that the fishing rights granted in the 1800s applied only to wild salmon and steelhead. The tribes had argued that hatchery fish compensate for wild runs that have declined. Hatchery fish have been included in the tribes' 50 percent allocation since 1974. (Source: Pacific Fishing, February, 1515 N.W. 51st, Seattle, WA 98107)

The first full year of operation for WPPSS nuclear plant 2 was a mix of "successes, disappointments, and surprises," according to the Washington Public Power Supply System's newsletter. The plant operated at a 55 percent capacity, close to the national average of 61 percent, despite the fact that the first few months were a "shakedown period." Biggest disappointment was the delay in operating at full power due to vibration problems from one of the plant's reactor recirculation pumps. The biggest success was a 100-day uninterrupted run. Total generation for the year was 5.2 billion kilowatt-hours, while the number of shutdowns was 19. (Source: Power Lines, December, Washington Public Power Supply System, Mail Drop 325, P.O. Box 968, 3000 George Washington Way, Richland, WA 99352)

Appliance efficiency standards have been upheld by the court in two California lawsuits filed by appliance manufacturers opposed to the state's new regulations. The new standards require energy use reductions of 10 percent in 1987 and 19 percent in 1992 over current standards. The first lawsuit challenged central air conditioning standards, and the second dealt with energy consumed by refrigerators and freezers. (Source: Western Energy Update, November, 6500 Stapleton Plaza, 3333 Quebec St., Denver, CO 80207)

Three Northwest states are among the top ten hydropower project developers. Between 1980-84, Idaho ranked fourth in the nation with 14 hydropower projects (36 megawatt capacity); Washington ranked sixth with ten projects (206 megawatt capacity); and Oregon seventh with eight (66 megawatt capacity). The other states in order of ranking included California, first; New York, second; New Hampshire, third; Maine, fifth; Colorado, eighth; Vermont, ninth; and Alaska, tenth. (Source: Hydro Review, special issue, 755 Boylston Street, Suite 707, Boston, MA 02116)

Sealed offices and space stations share a common problem—indoor air pollution; and NASA has a promising solution—house plants. NASA's scientists made the discovery while searching for a biological air purification system for space stations. Spider plants performed best at removing toxic gasses given off by such things as formaldehyde, nitrogen dioxide, and carbon monoxide—all pollutants that can be found in homes. While prevention is still the best solution, eight to 15 plants can do wonders for the average home, according to NASA scientist B.C. Wolverton. (Source: Northwest Conservation Act Coalition Report, Box 20458, Seattle, WA 98102)

Dennis Cunningham Illustration

THE GOALS PROCESS UPDATE

by Ruth Curtis

One of the principal products the Northwest Power Planning Council is hoping for as it works in the fish and wildlife arena this year is cooperation. Fishery agencies, tribes, and other interests are currently working together to help develop and implement the Council's Columbia River Basin Fish and Wildlife Program. That cooperation is an underpinning of an activity known as the goals process.

The goals process is designed to set the scope of the Council's program to protect and enhance the salmon and steelhead resources damaged by hydroelectric development in the Columbia River Basin. The process deals with such issues as the extent of the salmon and steelhead losses and the degree to which electricity ratepayers should be expected to restore these fish populations.

Goals were not included in the original program in 1982 because swift, remedial action was needed to protect the fish, and more study was needed before goals could be discussed. But the goals process is now underway and by early summer the Council will be making preliminary decisions on goals for the program.

Below is a summary of the current major activities in the goals process.

Losses and contributions

The Council and its contractors have been assembling data that estimate the historical abundance and current size of the salmon and steelhead resource in the Columbia River Basin. This information will be used to help determine hydropower development's contribution to the resource's decline. *The Revised Draft Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin,* went to the Council for approval in mid-February. It had been through two rounds of public review: the first in the fall, after which it was rewritten to reflect comment providing additional information, and then again in January.

The fishery losses had many causes, but the Council is instructed by the Northwest Power Act to address only hydropower-related losses. An issue paper on the contribution of hydropower to those losses will be distributed for public comment in late March. (See order form on back cover.) A public review period will follow, and the Council will make a preliminary decision on the amount of the hydropower-related losses in the following months.

Planning workshop

Key Northwest fish and wildlife biologists and planners gathered this winter for a workshop where they developed modeling procedures for the Council to use to develop fish production alternatives for the Columbia River Basin.

Salmon and steelhead data base

The Council and the region's fishery managers are better able to determine where the fish actually are in each individual section of stream by using the Council's salmon and steelhead data base—the first such comprehensive data base in the Northwest. It is being used to estimate the productivity of the subbasins that make up the Columbia River Basin. The data base and its potential are discussed on page 23.

Goals package

In late spring or early summer, the Council will be ready to look at actual numbers for the goals of the fish and wildlife program. An issue paper addressing these goals will then be distributed for review. The information provided by the losses and contributions work, the salmon and steelhead data base, and various preliminary policy decisions the Council has made will be combined into this draft goals package.

Production objectives workshops

Production objectives are the building blocks that will be used to meet the goals the Council decides upon. While goals will be long term and for the entire Columbia River Basin, objectives will be smaller, short term, and for the basins of individual streams, known as subbasins.

To develop these objectives, a series of workshops on individual geographic areas will be held this spring for fishery experts. Using the model developed at the previous planning workshop, these experts will develop alternative objectives for each subbasin in the Columbia River Basin. Each alternative will contain a management strategy and an estimate of the number of fish expected from that strategy.

Before the Council makes a decision on any of these production objectives, an issue paper will be distributed summarizing and analyzing the production alternatives in terms of the Northwest Power Act, which called for the Columbia River Basin Fish and Wildlife Program, the program's proposed goals, and fishery agency and tribal management objectives. A preliminary Council decision on these objectives is expected in August 1986.

Calendar

March 1 - June 30—"Energy Smart Design for Commercial Buildings," a series of workshops throughout the Northwest on integrating energy efficient design into projects without increasing costs, sponsored by the Bonneville Power Administration. For information: MCC Associates, Inc., P.O. Box 7472, Silver Spring, Maryland 20907, 1-800-622-6200 or (301) 589-8130.

March 12-13—Northwest Power Planning Council meeting in Portland, Oregon.

March 27-29—"Electrical Industry Exposition" in Tacoma, Washington, sponsored by the Electric League of the Pacific Northwest. For information: Electric League of the Pacific Northwest, Suite 210, 555 116th Ave. NE, Bellevue, Washington 98004, (206) 455-0490.

April 9-10—Northwest Power Planning Council meeting at the Village Red Lion in Missoula, Montana.

May 7-9—"Tools for Managing Energy," the annual conference of the Interstate Solar Coordination Council at the Portland Marriott Hotel, Portland, Oregon. For information: Jon Biemer, Bonneville Power Administration, (503) 230-3457, David Robison, Oregon Department of Energy, (503) 378-4040, or Lawrence & Craig, P.O. Box 40244, Portland, Oregon 97240.

May 14-15—Northwest Power Planning Council meeting at the Federal Building in Seattle, Washington.

June 3-5—"4th Annual Renewable Energy Technologies Symposium and International Exposition" at the Anaheim Convention Center in Anaheim, California. For information: Barbara Flynn, Renewable Energy Institute, 1516 King St., Alexandria, Virginia 22314, (703) 683-7795.

June 8-14—"11th Annual National Passive Solar Conference" at the University of Colorado in Boulder, Colorado. For information: Susan Burley, 2030 17th St., Boulder, Colorado 80302, (303) 443-3130.

June 11-12—Northwest Power Planning Council meeting in Idaho. Please call central office for location.

July 14-17—"FutureFocus: The Next 15 Years," the 1986 annual conference of the World Future Society in New York City, New York. For information: Scott Foote, World Future Society, 4916 St. Elmo Ave., Bethesda, Maryland 20814, (301) 656-8274.

July 21 - August 22—"Fisheries Data Management Using Microcomputers," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University in Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

August 25 - September 18—"Fisheries Economics," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University in Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

Illustration by Nancy Sasser

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: not all publications are available immediately, but will be sent to you as soon as they are.)

Publications

- ☐ 1986 Power Plan (Do not check if you ordered the draft plan. The final plan will be sent to you automatically when available.)
- ☐ Response to Comments on 1986 Power Plan.
- ☐ Contributions Issue Paper—Columbia River Basin Fish and Wildlife Program Goals Study (See page 26.)
- ☐ Staff Report on Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin (See page 26. Do not check if you ordered the draft or the revised draft. It will be sent to you automatically.)
- ☐ Hungry Horse Dam: Wildlife Mitigation Proposal Issue Paper—Columbia River Basin Fish and Wildlife Program (See page 22.)
- ☐ 1986 Applications for Amendment—Columbia River Basin Fish and Wildlife Program (This is a multi-volume set.)

Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: do not check if you already are receiving them.)

- ☐ *Northwest Energy News* (this bimonthly magazine)
- ☐ *Update!* (public involvement newsletter mailed with the Council meeting agenda)

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N O R T H W E S T
ENERGY NEWS

is published bi-monthly by Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205.

The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources.

Executive Editor: Carlotta Collette
Art Director: Stephen Sasser
Special Departments Editor: Ruth Curtis
Production: Marty Todd

Editor's Notes

As we were about to go to press this month, the Ninth Circuit Court of Appeals handed down its decision on the constitutionality of the Northwest Power Planning Council in the suit brought by the Seattle Master Builders. The court's ruling in favor of the Council is summarized in our story on page 3.

With this issue, Northwest Energy News begins a series of articles relating to the amendment process for the Columbia River Basin Fish and Wildlife Program. This issue's fold-out on the major dams of the Columbia and Snake rivers and accompanying glossary are offered as background on amendments that refer to mainstem fish passage problems. In future issues, we will explore such concerns as wild versus hatchery fish, fish production potentials in the basin and the ongoing discussion to define the overall scope of the fish and wildlife program.

In the meantime, work is also proceeding on the Western Energy Study (it was called the "West Coast Energy Study" in the 1986 Power Plan's "Action Plan"). This magazine will continue to offer updates on the implementation of this, and other activities called for in the 1986 Northwest Power Plan "Action Plan."

COVER ILLUSTRATION: This issue's cover drawings of the major dams of the Columbia and Snake Rivers were created by Lyn Nance-Sasser.

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...we uphold both the constitutionality of the Pacific Northwest Electric Power and Conservation Planning Council, a policy-making body established by that Act, and the validity of the Council's 1983 Northwest Conservation and Electric Power Plan.

– United States Court of Appeals
for the Ninth Circuit

by Dulcy Mahar

Expressing pleasure, but not surprise, members of the Northwest Power Planning Council hailed a court decision upholding both the Council's constitutionality and its power plan as "a victory for Northwest ratepayers." On April 10, as the Council was meeting in Missoula, Montana, the U.S. Court of Appeals for the Ninth Circuit handed down a decision that supported the Council in each of the areas that had been raised by the suit. (See excerpts of the 2-1 decision on page 4.)

The case began in July 1983, when a group of homebuilders and industry representatives, led by the Seattle Master Builders Association, filed suit against the Council. While the impetus of the action was a disagreement with the Council's model conservation standards (measures to make new buildings more energy efficient in terms of electricity use), the suit also challenged the Council's very constitutionality.

The court denied the homebuilders' arguments about the cost effectiveness of the standards as well as denying their contention that the Council's manner of calculating the standards was arbitrary and capricious. The court also found the Council to be an interstate compact agency and, as such, correctly set up under the terms of the U.S. Constitution.

Basis for the homebuilders' assault on the constitutionality of the Council was the Apointments Clause of the Constitution. This clause requires officers of the United States to be appointed by the Executive Branch of government. The Council maintained its members, who are appointed by the region's governors, are not officers of the United States, but members of an interstate compact agency operating under the Compact Clause of the Constitution.

The constitutionality issue became the predominant issue in January 1985 when the Department of Energy and the Bonneville Power Administration both asked the Department of Justice to intervene in the suit. A letter from the Department of Energy to the Department of Justice argued that if the Council is found to be more than "merely advisory" in its relationship with Bonneville, the Council should be ruled unconstitutional.

Bonneville, which is under the Department of Energy, took a slightly different approach. Bonneville urged Justice to avoid the constitutionality issue by asking the Court to sever provisions related to the Council which constrain Bonneville.

The four Northwest governors saw little difference between the Department of Energy and the Bonneville positions. In a letter to Bonneville Administrator Peter Johnson, they wrote, "While the Department of Energy suggests that the Council be ruled unconstitutional if it is found to exercise any authority over your agency, you assert you are defending the constitutionality of the Council by asking that any such Council authority to constrain Bonneville actions be stricken from the Act. This is a distinction without a difference. Clearly, the effects of either action would be to remove any constraints which the Northwest states can exercise over Bonneville actions." The letter was signed by Governors Vic Atiyeh of Oregon, Booth Gardner of Washington, John Evans of Idaho, and Ted Schwinden of Montana.

The governors particularly objected to what they called attempts "to change unilaterally the agreement made with the states" which brought about the Northwest Power Act. "There would have been no Northwest Power Act had it not been for the strong role granted our states through the Council," they said. That agreement, which is a fundamental part of the Act, gave Bonneville expanded authority to acquire resources. In return, the Northwest states, through their representatives on the Council, achieved certain rights including the right to review major Bonneville resource acquisitions to ensure that they are in the best interest of the region.

While the Department of Justice did intervene in the case, it took neither the position of the Department of Energy nor Bonneville, refusing to broaden the suit beyond the issues raised by the Seattle Master Builders. Justice concluded that the homebuilders' challenge to the constitutionality of the Council should be dismissed on the grounds that "the Council complies with the Appointments Clause with respect to the statutory provisions that are involved in this case."

Excerpts from the decision handed down by the U.S. Court of Appeals for the Ninth Circuit

(citations have been eliminated for readability)

"We hold that it [the Council] is a compact agency and that its members are not 'federal officers' within the meaning of the appointments clause. Congress' intention is clear from both the language of the statute, and from the legislative history, that the Council is not to be a federal agency and is not to be controlled by the federal government. The alternative establishment of the Council as a federal agency was a rejected second choice. One of the principal purposes of the Council is to represent state concerns about regional problems; Congress deemed it undesirable for a federal agency to represent state concerns to yet another federal agency."

"Petitioners and amicus ... argue that certain features of the Council are unusual and that this unusual nature militates in favor of considering the Council to be a federal rather than a compact agency ... An unusual feature of a compact does not make it invalid. A leading article by Professors Frankfurter and Landis sets the tone for the modern use of compacts. It encourages new uses ... 'Political energy has been expanded on sterile controversy over supposedly exclusive alternatives instead of utilized for fashioning new instruments adapted to new situations.'"

"There is no bar against federal agencies following policies set by nonfederal agencies. The federal government has in fact agreed to be bound by state law in several areas ... The federal government can be subject to state law where there is a clear congressional mandate and specific legislation which makes the authorization of state control clear and unambiguous."

"Petitioners argue that, even if the Council is a valid compact organization, the appointments clause of the United States Constitution requires that Council members be appointed not by the state governors, but by the President because the Council exercises significant authority over the federal government ... The appointments clause is addressed to the separation of power between the President and Congress. No court has yet held that the appointments clause prohibits the creation of an interstate planning council with members appointed by the states."

"Petitioners' theory, however, would outlaw virtually all compacts because all or most of them impact federal activities and all or most of them have members appointed by the participating states ... The Council members do not perform their duties 'pursuant to laws of the United States.' Rather, the Council members perform their duties pursuant to a compact which requires both state legislation and congressional approval."

"More important, the states ultimately empower the Council members to carry out their duties ... As with any compact, congressional consent did not result in the creation but only authorized the creation of the compact organization and the appointment of its officials. The appointment, salaries, and direction of the Council members are state-derived ... The question, thus narrowed, because Council members do not serve pursuant to federal law, makes immaterial whether they exercise some significant executive or administrative authority over federal activity."

"Because Congress neither appoints nor removes the members of this Council, the balance of power between Congress and the President is unaffected. The Council violates neither the compact nor appointments clauses of the United States Constitution. The Act establishes an innovative system of cooperative federalism under which the states, within limits provided in the Act, can represent their shared interest in the maintenance and development of a power supply in the Pacific Northwest and in related environmental concerns."

"The preparation and consideration of the plan is a matter within Council authority over which the Act accords the Council considerable flexibility. For the same reasons that we defer to BPA expertise in construing other sections of the Act, therefore, we will defer to the Council's interpretations ... if reasonable."

"Petitioners argue that it is unreasonable for the Council to interpret cost effectiveness based upon a forecast which the Council itself concedes is 'very unlikely.' Petitioners argue that the Council cannot adopt a cutoff for cost effectiveness unless it is 'more likely than not' that the predictions upon which it is based will be realized ... the Act allows the Council the flexibility to define cost effectiveness not in terms of current energy needs but by reference to whether a resource is 'forecast ... to be ... available within the time it is needed.' The Council is given the statutory mandate to make a forecast and to base its conservation plan on this forecast. Petitioners also argue that the Council is basing its plan upon projected energy costs and demands that the Council itself is unable to predict with accuracy. The Act does not require the Council to follow any particular method or timetable for forecasting the amount or cost of future energy demand; we do not find the 20-year forecast or the 4 cents/kwh cutoff to be unreasonable in light of the inherent indefiniteness of long-term energy forecasting."

"They [petitioners] contend that the plan must examine the cost effectiveness of each individual conservation measure because the Act uses the singular in referring to cost effectiveness of 'any measure or resource.' The Council's approach is correct. The Act does not require that each individual component of the model conservation standards be cost effective. The purpose of the conservation standards is to require the Council to examine cost effectiveness of standards which, when adopted in their entirety, result in cost effective energy savings. All that is required is that the model conservation standards be cost effective, when viewed as a whole."

"Petitioners argue that economic efficiency, like cost effectiveness, should properly be measured on a component-by-component basis ... Because the plan relies on marginal cost to measure economic efficiency, petitioners argue, the standards for economic feasibility are only theoretically feasible and therefore unreasonable ... The Council believes that marginal cost is a more accurate measure of energy cost than is average cost because of differences in market price for different consumers ... The plan's definition is consistent with congressional intent ... Petitioners have not shown the Council's definition of economic feasibility to be unreasonable."

"Petitioners challenge the technical, analytical process by which the Council arrived at its model conservation standards. The dispute centers on whether it was acceptable for the Council to arrive at its standards using industry engineering standards and computer simulations of energy usage, conservation and efficiency of various conservation measures ... The Act does not, however, mandate any particular method of forecasting under either the definition of cost effectiveness, or the section requiring the preparation of model conservation standards. The Council is given the direction under the statute to develop a forecast which provides model conservation standards that are cost effective, economically efficient and reflect regional geographic and climate differences ... the Council's use of four, 20-year forecasts was reasonable in light of its statutory mandate."

"The choice of methodology is a highly technical question which falls within the unique expertise of the Council. Unless an abuse of discretion is demonstrated, this court will not substitute its judgment on particular testing methodology ... The methodology used in the 1983 plan employed accepted industry standards and principles of analysis ... We express no opinion on the methodology and definitions proposed by the petitioners. Petitioners have not presented evidence before this court to raise serious doubt about the accuracy or reliability of the Council's computer simulation or the *Handbook of Fundamentals*, upon which the Council relied. We conclude that the Council did not abuse its discretion when it chose to rely upon industry standards and computer simulations in its calculations ..."

FISH AND WILDLIFE PROGRAM APPLICATIONS FOR AMENDMENTS

by Ruth Curtis

The Northwest Power Planning Council has received 89 proposed amendments to its Columbia River Basin Fish and Wildlife Program. The majority of these were submitted by Northwest fish and wildlife agencies; others were received from the region's Indian tribes, federal agencies and other groups. For the first time, a local government and a chamber of commerce have proposals for the program.

The fish and wildlife program was originally adopted by the Council in 1982 and amended in 1984. It was developed in response to a charge by Congress to protect and restore the basin's once teeming fish and wildlife populations to the extent they have been depleted by hydroelectric development and operations.

Recognizing that the program cannot be static if it is to remain vital and effective, the Council periodically reopens the program for amendments and asks for input from interested parties throughout the Northwest. This allows the program to change to reflect the knowledge gained through study, practice and new technology.

Between July 9, 1985, and February 18, 1986, the Council asked interested parties to submit applications containing proposed amendments. The majority of the proposals submitted relate to resident fish and wild, natural, and hatchery propagation of anadromous fish (sections 700 and 800 in the program). Resident fish spend their entire lives in freshwater, while anadromous fish, such as salmon and steelhead, hatch in freshwater and migrate to saltwater to mature before returning to spawn in freshwater.

The Council will review the applications and, by February 18, 1987, either adopt, reject or modify the proposals. During this period, the public is urged to comment on these proposed amendments. The proposals have been bound into a five-volume set, *Applications for Amendments: February 1986,* and are being distributed to interested people. (To receive a copy, use the order form on the back cover of this magazine.) For those who are not interested in the entire set, a summary of the amendments is also available.

Consultations on the applications, hearings, and other opportunities for comment, both oral and written, will be announced in the Council's public involvement newsletter, *Update!* (Use the back cover order form to receive *Update!*)

The following criteria, required by the Northwest Power Act, will be used to evaluate the proposed amendments to the program:

- Measures in the program must protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management of hydroelectric projects, while assuring the Pacific Northwest an adequate, efficient, economical, and reliable electrical power supply.
- The measures must complement the existing and future activities of the federal and state fish and wildlife agencies and the appropriate Indian tribes.
- Each program measure must be based on, and supported by the best available scientific knowledge.
- Where equally effective alternative means to achieve the same sound biological objective exist, the program must use the alternative with the lowest economic cost.
- Measures must be consistent with the legal rights of the appropriate Indian tribes in the Northwest.
- In the case of anadromous fish (primarily salmon and steelhead), the program must provide for improved survival at hydroelectric projects in the Columbia River system. The program must also provide sufficient water flows between projects to improve the production, migration, and survival of the fish as necessary to meet sound biological objectives.

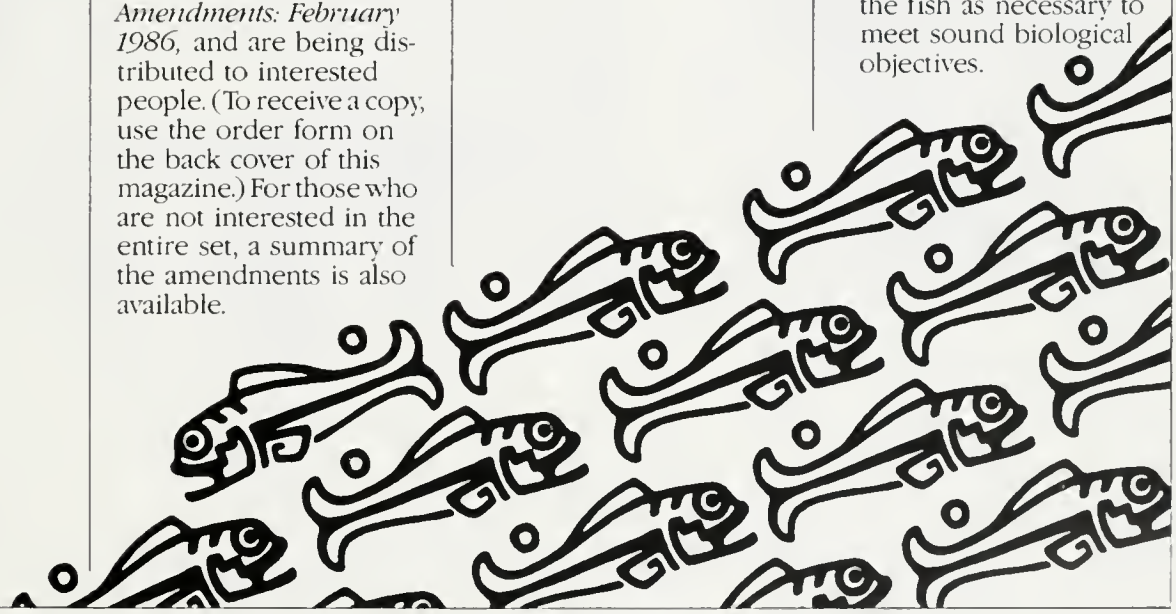


Illustration: Marty Todd

The Western Connection

by Carlotta Collette

One of the tasks the Northwest Power Planning Council set for itself in the 1986 Northwest Power Plan's "Action Plan" is a Western Energy Study.* The goal of the study is to bring together technical representatives from utilities, planning agencies and utility commissions in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming and Canadian utilities in British Columbia and Alberta, to identify the potential costs and benefits of coordinating and sharing the West's electrical power resources.

This spring, the Council will develop a detailed workplan and form a technical steering committee to begin the study. As work progresses, consultations with fish and wildlife agencies and Indian tribes, affected utilities, state energy and regulatory agencies, environmental groups, and other interested members of the public will provide opportunities to broaden the forum.

There were dreams of moving Northwest hydropower on giant power-lines down to California before there was either notable hydroelectric development in the Northwest or much of a market for it south. A 220,000 volt tie line to shuttle an anticipated hydropower surplus between the Northwest and Southwest was under discussion as early as 1919. When the first construction began on Bonneville Dam in the early 1930s, a power transmission grid connecting Seattle, Spokane and Portland to points east into Montana and Utah, south into California and North into British Columbia was already on the drawing board.

International treaties for sharing the rich water resources that straddle the border between the United States and Canada also predate development of those resources. Before the Columbia River dams were built, agreements between the United States and Great Britain had to be reached to guarantee flows to supply the dams downriver. The Boundary Waters Treaty of 1909 assured certain rights to navigation, domestic water supply, flood control, irrigation and wet lands recovery, conservation of fish and wildlife resources and water power development on waters that flowed between the United States and Canada.

By the 1980s, both the Pacific Northwest and British Columbia had developed enormous hydropower and thermal electrical generating resources and the transmission lines needed to transfer electricity throughout the West. Giant power conduits now deliver electricity from British Columbia to the Northwest, and from the Northwest to the Southwest and Rocky Mountain regions.

This interconnection of supply and demand in electrical resources is the fulfillment of a federal dream, a dream of "national cooperative pooling of electric power," as President John F. Kennedy put it. Pooling electricity has been enormously beneficial to all parties in the trading.

For example, surplus electricity from British Columbia and the Pacific Northwest is frequently shipped south during the spring and summer months when California's power use peaks. Later in the year, when the Northwest's winter needs call for more power, electricity can be returned.

The strategy saves California having to develop resources that would cost that state more to build than it spends on Northwest power. The Northwest also benefits by market-

Illustration by Lynn Carson

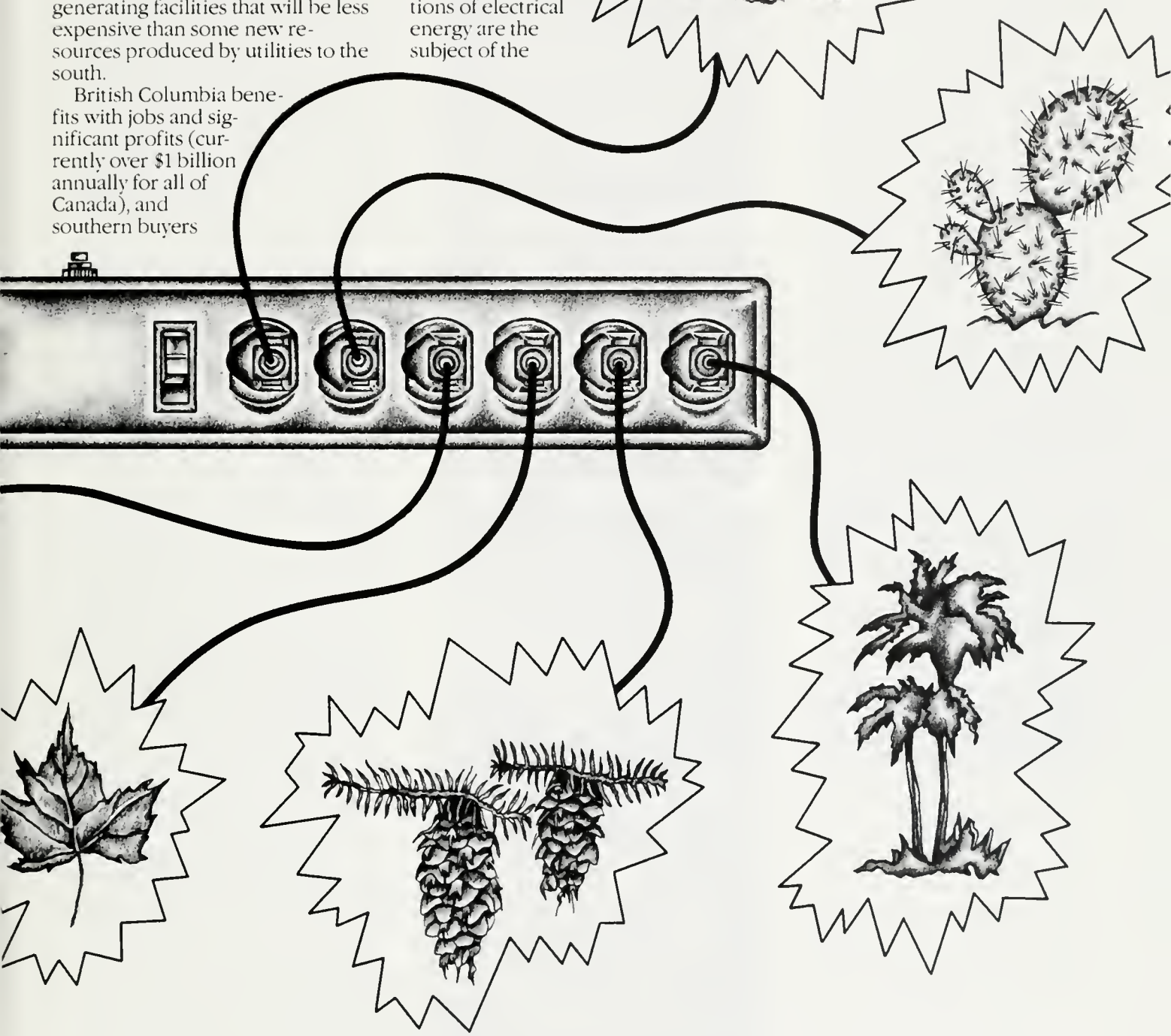
ing hydropower that would otherwise be spilled over the dams. This kind of transaction, plus the current sales of additional surplus power to California, provides the Northwest with over $800 million in revenues from California each year.

A similar arrangement is evolving as British Columbia develops its abundant hydropower resources for export to the United States. Under certain conditions, this province may be able to build hydro-generating facilities that will be less expensive than some new resources produced by utilities to the south.

British Columbia benefits with jobs and significant profits (currently over $1 billion annually for all of Canada), and southern buyers are protected from the environmental consequences of constructing and operating major new generating resources. These sorts of exchanges are occurring among all 11 western states and with both British Columbia and Alberta in Canada.

Such distributions of electrical energy are the subject of the Council's study. Before identifying agreements in excess of those already in place, the participating entities need to gain a thorough understanding of existing energy needs and resources in each of the interconnected regions.

Estimates must



also be made of the range of future energy requirements, and the costs and availability of resources to meet those requirements. In addition, the potential for adding to the capacity of the existing transmission system needs to be quantified, and institutional and environmental constraints to resource developments and expansion of the interties need to be assessed.

Among potential new agreements the study will explore are the following:

- The Northwest could work with the Southwest to maintain the South's older, oil-fired generating plants as a back-up strategy to firm up nonfirm (not reliably available) power from the hydrosystem.
- The Bonneville Power Administration and British Columbia Hydro could combine their surpluses to make a long-term guaranteed sale to California.
- Better coordination in general between Bonneville and British Columbia Hydro could lead to more efficient operation of the two systems. Closer ties could profit both entities and possibly improve river flows for migrating fish.

The Western Energy Study could provide a forum for exploring these and other arrangements that can better integrate energy planning throughout the West. Such coordination can expand the Council's least cost planning strategy to the mutual benefit of all 11 western states and western Canada.

*** The Western Energy Study is referred to as the West Coast Energy Study in the 1986 Northwest Power Plan. The name has been changed to more accurately reflect the breadth of participants, many of whom are non-coastal.**

MODELING the Columbia

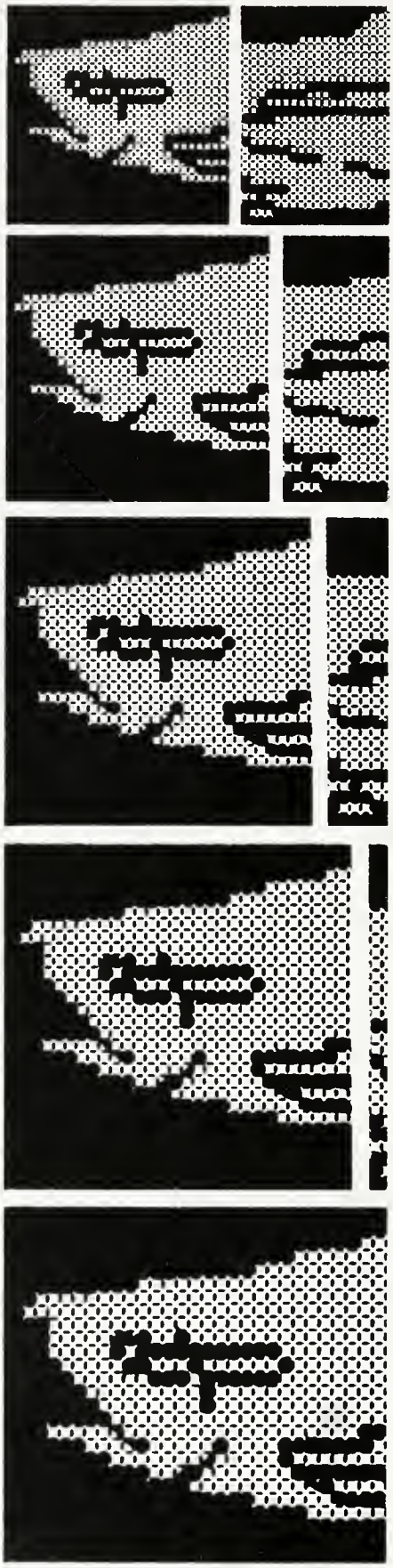


Illustration by Lynn Carson

by Carlotta Collette

The workshop: building the model

There are four green squares on the computer screen. Bright green lines inside each square trace up and down. "Try decreasing ocean harvest," comes a voice from the back of the room. Carl Walters taps out a quick keyboard command and the green lines respond, rising slightly, dipping, then rising substantially. "Take out the dams, what happens then?" another voice queries. Walters plays out the new command and the green lines leap.

The small crowd of fisheries managers is pleased. Walters, an internationally recognized computer modeling specialist hired by the Northwest Power Planning Council, has just helped them restore the Columbia River Basin salmon and steelhead runs—at least as far as the computer is concerned. Cutting out fish mortality at the dams was an obvious, if impractical, gesture in the interest of improving the lot of salmon and steelhead in the Columbia. But the model doesn't distinguish realistic measures from unrealistic ones. People still have to choose what to do.

"The Columbia River Basin computer model is really an instrument that should stimulate better human thought, rather than distill human thought and give a neat, cut and dried answer," explains Northwest Power Planning Council member Kai Lee. "In fact, the model won't give us a simple answer. It won't tell us what to do. It won't drive us into a corner."

The four squares on the screen represent, in this case, adult and juvenile chinook salmon and steelhead trout in the John Day subbasin. The lines in the top boxes show the estimated numbers of adult fish in the tributary, the mainstem Columbia, the estuary at Astoria, and in the ocean. Below them are the numbers of juveniles at the mouth of the John Day and the numbers remaining as the run passes Bonneville Dam.

The room full of fisheries resource managers are from state and federal fish and wildlife agencies, Northwest Indian tribes, the Bonneville Power Administration, the U.S. Army Corps of Engineers, the U.S. Forest Service, electric utilities and regional anglers' organizations. They gathered in December and January to put together this computer simulation of the life cycle of the basin's anadromous fish resources in a workshop sponsored by the Council.

Guided by Walters and his compatriots from Environmental and Social Systems Analysts Ltd. (ESSA) of British Columbia, they assembled the computer model to organize available information about the basin's salmon and steelhead. Such organization makes it easier to see what data still need to be collected and what information appears to be inconsistent with other findings.

What can the model do?

"As far as I'm concerned," says Don Godard, Council member from Oregon, "the value of the computer model is that it can act as an accounting tool that allows us to collect and present a large amount of data in a comprehensive and cohesive way."

But the model can do more than collect and organize the data. It can also take that data and manipulate them to reflect actions the resource managers might take in the basin itself—only the computer is faster. Modeling the possible outcome of fish passage, habitat or harvest changes illustrates which aspects of the fish life cycles are most critical to increasing fish production and survival. Some enhancement measures may in fact have little or no positive effect on the long-term growth in fish runs. Others, perhaps considered less valuable, may turn out to be of great significance.

"The model will help us see what the basin actually looks like," adds Godard, "how much habitat is available, etc., and it will help us look at a lot of alternative strategies to produce more fish."

To break the model down into its component parts is to gain insight into the life cycle of the fish being modeled. The first component represents the production of fish within various subbasins. This phase includes the spawning, hatching and rearing of young salmon and steelhead in freshwater stream reaches or hatcheries. This segment of the model provides the number and specific stock of juvenile fish migrating from the subbasin to the ocean.

"The Columbia River Basin computer model is really an instrument that should stimulate better human thought, rather than distill human thought and give a neat, cut and dried answer."
—Kai Lee

The second component picks up the young smolts as they come into the mainstem hydroelectric system. A general model estimates survival through a single reservoir and dam, factoring in such things as a specific stock's ability to be guided past turbines rather than drawn through them. While this component does not distinguish fish by subbasin, it does incorporate the smolt output from the first component. This number is then run through the second component once for each dam the fish must pass.

Fish survival in the river, estuary and ocean, as well as ocean and river harvests, are accounted for in the computer model's third component. Estimates of smolt mortality in the estuary are subtracted from the number calculated to have made it past Bonneville Dam (the last dam on their way to the ocean). In the ocean, the modeled fish are subjected to natural and manmade harvests.

The survivors, known as the escapement, are further reduced in numbers by commercial and sport fishing in the estuary and in the river itself. Additional mortality caused by upstream passage past each dam decreases the ultimate number of adults that finally make it to their tributary of origin. This remnant becomes the starting number for the next computer run.

This model is necessarily very general. Models that only depict mainstem passage, for example, can be much more detailed and might provide more information specifically relating to the dams and reservoirs. The Council's model is an attempt to integrate a lot of data into a simple format. It is designed to review possible outcomes of enhancement measures on a subbasin by subbasin and stock by stock basis.

"There's a real danger when you get a large number of people and a large number of specialized concerns," argues Walters. "It could degenerate into a super-complicated accounting system on what everyone is doing, without providing any clear overview of how it all fits together... you can't explore indirect impacts."

But the uncertainty about what might work and what might not is only half the problem, according to Lee. The other half is the complexity involved in all the organizations that share responsibility for the resource. That's why representatives from the key resource managers and interested organizations are working with the Council and the ESSA consultants to develop and evaluate the model.

The model and adaptive management

"Immediate action to save the fish in the Columbia River Basin is sorely needed," Council member Lee admits. "But, because we don't know everything we need to know about this basin, every fish and wildlife action we take is inevitably an experiment. We need to choose which experiments will give us more information to help us improve our actions over time. The model can help with that.

"The model can replicate actions, trying them in different subbasins to make sure the results are independent of variables in the settings. The model can also compare effects between subbasins. If you are going to test actions in some areas, you need other areas where you are not causing modifications, so you can see whether what you think you're doing is really making a difference."

Walters agrees. "There's been a tradition in fisheries work that when you're really uncertain about what to do you agonize a long time. Then you

take your best stab at it and make your best prediction of an outcome. That's really about the worst thing you can do. What you ought to do is identify how broad the range of possible outcomes is. Then use that range to plan better experiments to help you see where you're going. In the past, a lot of rather foolish investments have been made, not because anybody was sure they were going to work, but because there was this feeling of desperation about losing the resource."

The model, however imperfect, can create the opportunity to simulate a broad range of options—far more than could ever be attempted in the basin itself. Jean Edwards, from the Columbia River Inter-Tribal Fish Commission, suggests that this makes the model a useful planning tool, but, she cautions, "I wonder how refined we want to make it. The model could become more than a tool. It could become a bible."

That concern is the most common one voiced by participants in the workshop where the model was developed, and by people who have seen it in action in the ensuing months. Still, in many ways, the computer model of the Columbia Basin is the ideal tool for the Northwest's fish and wildlife program. It can explore the complex relationships that govern fisheries work in the basin. It can help guard against piecemeal approaches to the restoration. It can point up areas where more or less study is needed. What is perhaps most important, the model can provide a structure for talking and working together—a significant step forward in any major undertaking.

Shorts

America's streams are becoming cleaner, according to the U.S. Environmental Protection Agency. In 1984, 73 percent of the streams met "designated uses" as determined under the Clean Water Act of 1972. In 1982, only 64 percent met the standard. There are about 12 million miles of streams in the United States. (Source: Trout Unlimited, winter, P.O. Box 1944, Washington, D.C., 20013)

Wind farm output is on the increase in California, according to the California Energy Commission. While the first-quarter figures from 1985 were at only 40 percent of the level that energy developers had predicted, the second quarter showed a major upturn. Preliminary second-quarter figures show an output of 260 million kilowatt-hours as compared to 48 million in the previous three-month period. This was the first period of California's mandatory wind farm monitoring. (Source: Solar Age, November, 7 Church Hill, Harrisville, NH 03450)

Least-cost energy planning is not required by two-thirds of all state regulatory commissions, according to a survey conducted by Rep. Claudine Schneider (R-RI), a ranking minority member of the U.S. House Science and Technology Committee. The report notes that states making progress face the problem of inadequate resources to investigate low-cost energy efficient alternatives to power plants. The states report they also need more information about commercial applications of energy saving technologies. (Source: Solar Lobby News Bulletin, January-February, 1001 Connecticut Avenue, N.W., Suite 638, Washington, D.C. 20036).

Solar Age magazine celebrated its tenth anniversary this winter with a special round-up of the "best and worst" in solar from the past ten years. Under "IDEAS: Hardest to Understand" they list "Life-cycle costing"—one of the many kinds of costing that Northwest Energy News has had to struggle with, too. They also named former Bonneville Power Administrator Don Hodel as "best Energy Secretary" noting that he was "Informed, anyway." "Vapor barriers...I mean vapor retarders, or is that air/vapor retarders" was the top entrant for most confusing issue. A solar restaurant in Cottage Grove, Oregon garnered the "Frying Pan Solar" award, and a solar funeral home proposed for Camillus, New York got equal billing as the "Deadpan Solar" best., (Source: Solar Age, 7 Church Hill, Harrisville, N.H. 03450)

Idaho's kilowatt consumption tops the nation at more than four times the average use in New York. A survey of 130 of the nation's major utilities conducted by the Edison Electric Institute concluded that Idaho Power Company's residential customers used an average of 15,432 kilowatt-hours of electricity in 1985. In contrast, Consolidated Edison Company customers in New York used only 3,445 kilowatt-hours last year. The difference, according to Jim Taney, Idaho Power Company's director of public information, is based largely on rates that are "far lower than most utilities and because of the extreme weather we had in 1985." Idaho Power's customers pay about 4 cents a kilowatt-hour, while in New York the average rate is about three times that. The national average rate is 7.4 cents a kilowatt-hour. (Source: The Idaho Statesman, Boise Idaho)

by Dulcy Mahar

It's called a run. A "race" would be a more apt description of the annual migration of young salmon and steelhead down from their birthing grounds to the sea. For indeed it is a race against a clock—a biological clock. And there are hurdles aplenty along the way.

It was clear from the start that fish pushing upstream would need help to vault the great dams straddling the Snake and Columbia rivers. The dams were obvious physical barriers. And so, over the years, measures such as fish ladders to help the adult fish return to their spawning grounds were introduced at many of the dams, with varying degrees of success.

The trials facing juvenile fish (smolts) rushing downstream to the ocean were studied in the 1940s, but action on their behalf was not taken until long after the majority of the dams were constructed. In fact, juvenile salmon and steelhead attempting to migrate to the sea were meeting equally and—in some cases—even more dreadful obstacles. If these young fish cannot make a safe journey to the ocean in the first place, the point of spending money on hatcheries to produce the fish, on ladders to help them back upstream and on habitat improvements to help them spawn is lost.

For this reason, improvement of downstream fish passage became the number one near-term objective of the Northwest Power Planning Council's five-year action plan in its *Columbia River Basin Fish and Wildlife Program* when it was amended in 1984.

The speed of the course

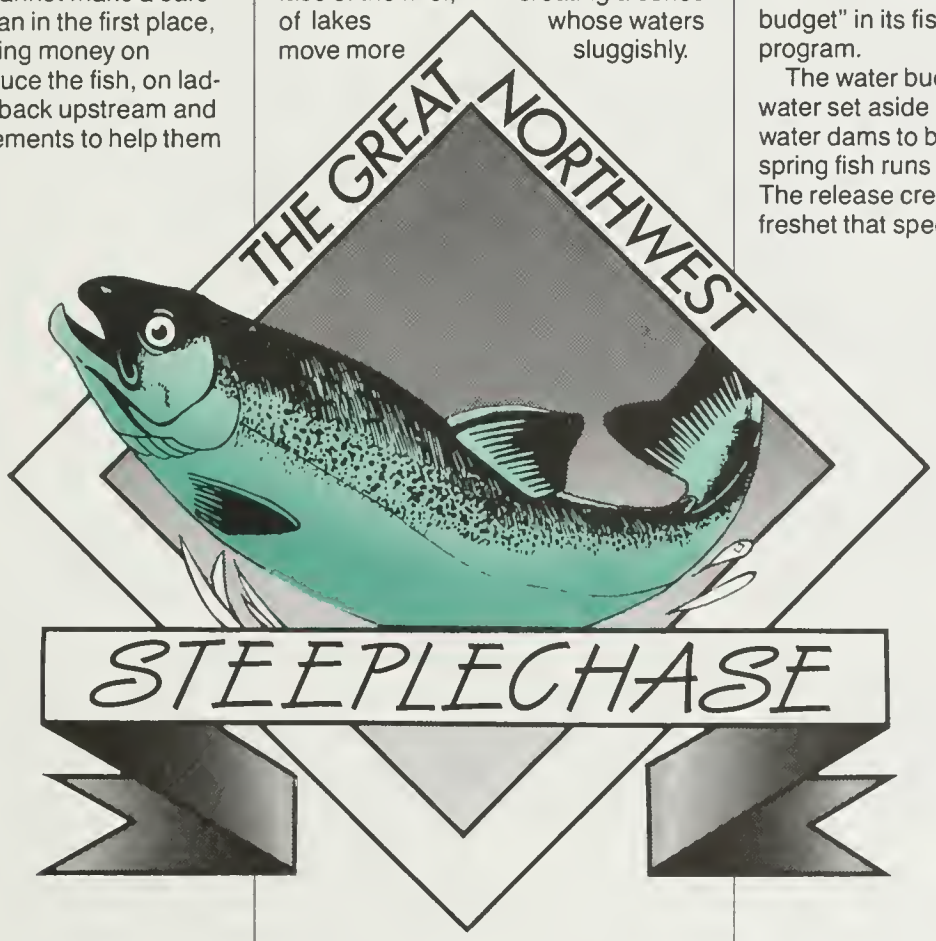
The two most significant problems affecting fish traveling downstream are the speed with which the river flows and the mechanics of providing safe passage past the dams themselves. The flow of the water is enormously important to the juvenile fish, which go through a smoltification process to prepare them for saltwater.

While it depends on the species (and studies are still not altogether conclusive) on average smolts' biological clocks dictate that their transfer to saltwater should take about 30 days. This was not a problem when the river ran free and spring freshets speeded the smolts on their journey. But the dams changed the face of the river, creating a series of lakes whose waters move more sluggishly.

This year, the Northwest Power Planning Council is, once again, reviewing and amending its Columbia River Basin Fish and Wildlife Program. Eighty-nine amendment applications have been submitted to alter actions taken to improve fish runs and wildlife survival in the Columbia River Basin. This mainstem passage primer provides background and an overview of the existing Columbia River Basin's mainstem hydroelectric system and some of the measures underway to mitigate fish losses due to development and operation of that system. Over the coming year, Northwest Energy News will be offering other primers and feature stories exploring aspects of the fish and wildlife program as the amendments and the study to set production objectives for the basin are reviewed. –CC

As a result, fish took up to 60 days to migrate to the sea, making them move vulnerable to disease and predation. Slower flows also altered water temperatures. The result was high mortality rates. To correct this, the Council called for a "water budget" in its fish and wildlife program.

The water budget is a block of water set aside in reservoirs at headwater dams to be released during spring fish runs (April 15 to June 15). The release creates an artificial freshet that speeds the migrating fish



in their race to the sea. The timing and amounts of this release are coordinated by water budget managers who represent the fish and wildlife agencies and Indian tribes and who also work with the Council, dam operators and other power interests.

The hurdles along the way

In addition to dangers posed by slower flows between dams, fish passing downstream also face injury or death at the dams themselves. The shearing action of the dams' turbine blades and the pressure changes that occur as the fish go through the turbine intakes can be deadly. Even where they survive the turbines, fish can be so stunned and disoriented that they are easy prey for predators.

It has been estimated that 15 percent of all fish passing through the turbines at each dam are killed. Because the fish go through so many dams, the cumulative loss had compounded to tragic dimensions. For example, without protective measures, only 23 fish would be left of every hundred that started the course at the top of the river above nine dams.

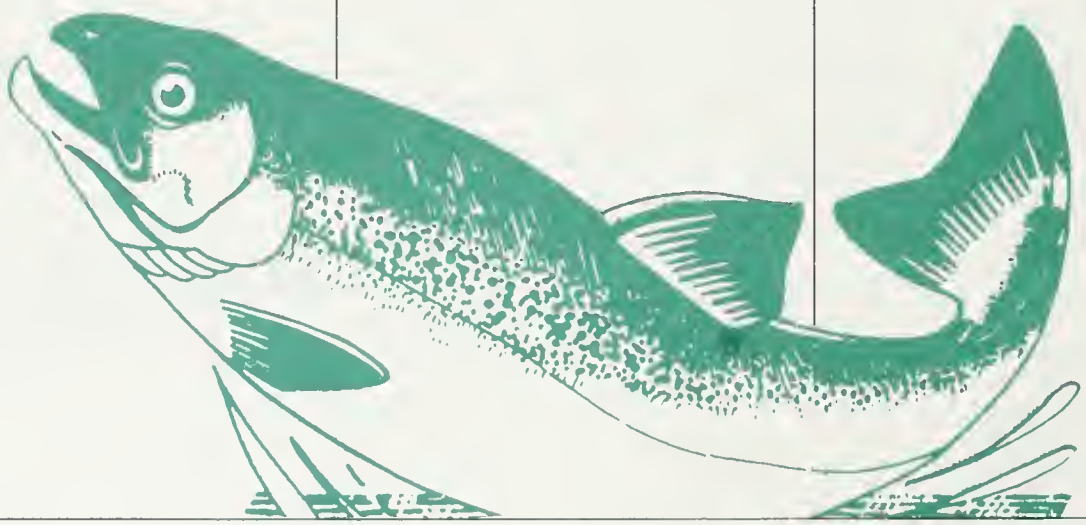
The Council's program calls for the Bonneville Power Administration and the dam operators to develop a coordinated fish passage plan that, until permanent solutions are in place, will provide a minimum 90 percent fish survival rate at each dam for 80 percent of the fish run. The permanent plan is to include "bypass" systems—methods to provide safe non-turbine passage for juvenile fish past each dam site. Such systems include submersible traveling screens (STS) that deflect the fish from the turbines and channel them through the dam to the tailrace, the area below the dam. Another bypass method is collecting fish and transporting them (in barges or trucks) around the dams.

At present, the bypass facilities in place vary from dam to dam in both type and effectiveness. Some dams have no facilities at all, while others have been improved with new bypass facilities. (See map for description of current facilities at each dam.) The Council's program not only calls for permanent solutions to guarantee fish survival, but also requires interim measures to protect fish until permanent solutions can be put in place. The most immediate interim solution is to "spill" water by releasing fish-laden water (most of the fish travel near the surface) through a spillway that bypasses the dam's turbines.

Spill differs from the water budget in that spill is provided at certain projects to help the fish avoid the turbines. The water budget actually increases the flow of water between projects to speed fish on their journey through the reservoirs.

Spill uses water that could otherwise pass through the turbines to generate electricity. But it does serve to protect fish, at least until permanent mechanical solutions can be installed.

The map that follows identifies the dams along the mainstem of the Columbia and Snake rivers. In addition to historical information (on page 14), the map describes the dams and the types of fish protection facilities, including those for downstream and upstream fish passage.



A Dam Glossary

Do *bypass, spill, spill-gates, bays, tailrace, forebay, etc.*, have you confused? Here's a quick glossary of the language of hydrologists (those dam engineers).

anadromous fish — Fish, such as salmon or steelhead trout, that hatch in freshwater and migrate to saltwater to mature before returning to spawn in freshwater.

bypass channel — Usually a large conduit or chute drilled or built into dams to enable young fish to migrate past dams without entering the turbines (part of a bypass system).

bypass system — A structure in a dam that provides a route for fish to move through or around the dam without going through the turbine units.

fish guidance efficiency (FGE) — The percentage of the total number of fish moving into a dam's turbine units which are diverted away by a fish guidance device such as a submersible traveling screen.

fish ladder — A device made up of a series of pools, similar to a staircase, that enables fish under their own effort to migrate up the river past dams.

fish lock — A device, used on an experimental basis, to get migrating adult fish past a dam. Similar to a ship lock, it collects fish in a chamber and then raises the water level until the fish can be released on the upstream side of the dam.

fish passage efficiency — The percentage of the total number of fish passing a dam which do not pass through the turbine units.

fish sampling facility — A facility at a dam where some portion of the fish moving past the dam are collected periodically for research purposes.

fish trapping facility — A facility where juvenile fish are captured to be transported down the river (around the dams) or adult fish are culled to be taken to a hatchery.

forebay — The part of a dam's reservoir that is immediately upstream of the powerhouse.

hydraulic capacity — The maximum amount of water that can go through the powerhouse at a project.

gatewell — The slot on the upstream face of a concrete dam where hydraulic gates are stored when not used to close the turbine intakes. (The gatewell also typically houses the fish screening device.)

intake — The entrance to a turbine unit at a hydroelectric dam.

mainstem — The main channel of the river in a river basin, as opposed to the streams and smaller rivers that feed into it. In the Columbia River Basin Fish and Wildlife Program, mainstem refers to the Columbia and Snake rivers.

mid-Columbia — The section of the Columbia River below Chief Joseph Dam and above the river's junction with the Snake River.

Mid-Columbia Settlement Agreement — An agreement reached in 1985 among state and federal fishery agencies, Indian tribes, and the operators of the Wells, Rocky Reach, Wanapum, and Priest Rapids dams. It deals with the protection of migrating juvenile fish at those dams.

nameplate capacity — The maximum power that a power plant, such as a hydroelectric dam, can produce under specific conditions.

powerhouse — A primary part of a hydroelectric dam. The powerhouse, as the name implies, is where the turbines are housed and where power is produced by the action of the water on the turbine blades.

river miles — Miles from the mouth of the river or, for upstream tributaries, from the confluence with the main river.

run of the river dams — Hydroelectric dams without large reservoirs and, therefore, with only a limited capacity for water storage. This means they also have limited control of their outflow and power generation.

sluiceway — A channel designed to collect ice and trash in the river (i.e. logs) before they get into the turbine units and cause damage. (On several of the Columbia River dams, ice and trash sluiceways are being used as, or are being converted into, fish bypass channels.)

smolt — A juvenile salmon or steelhead migrating to the ocean and undergoing physiological changes to adapt its body from a freshwater to a saltwater existence.

spill — Releasing water out the spillgates, bays or ways (all about the same thing) rather than through the turbine units. (The spillway is the dam's safety valve. Without it, excess water not needed to generate power can cause damage to the dam's structure or overflow the dam, causing structural damage or possible flooding downstream.)

stock — Fish spawning in a particular stream during a particular season which generally do not interbreed with fish spawning in another stream or at another time.

storage dam — A dam with a large reservoir that can hold water over from the annual high-water season to the following low-water season (as opposed to run-of-river dams that have very little storage).

submersible traveling screen (STS) — An enormous rotating screen, designed to fit into a dam's turbine intake at an angle to divert fish heading into turbines, up into bypass channels.

tailrace — The canal or channel that carries water away from the dam.

tailwater — The water surface immediately downstream from a dam.

transportation — Collecting migrating juvenile fish and transporting them around the dams using barges or trucks.

water budget — A block of water used to increase the survival of juvenile fish by increasing the mainstem Columbia's flow during their spring downstream migration period. The water budget was proposed by the Council and is managed by representatives of the fishery agencies and Indian tribes.

Compiled by
Ruth Curtis
and
Carlotta Collette

Major Dams of the Columbia and Snake Rivers

The Columbia River Basin's hydroelectric system is this nation's most productive source of hydropower. The major dams listed below have a combined potential capacity of over 23 000 megawatts of power.

1. Bonneville Dam
Location Bonneville Oregon River Mile 146.1 *Operator* U.S. Army Corps of Engineers *Completed* 1938 (Powerhouse I 10 turbine units) 1982 (Powerhouse II 8 turbine units and 4 fishway) Powerhouse I *Nameplate capacity* 518 MW *Hydraulic capacity* 136 000 cfs Powerhouse II *Nameplate capacity* 532 MW *Hydraulic capacity* 152 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities Powerhouse I — Submersible traveling screens (STSs) on all turbine units with a bypass system to tailwater Powerhouse II — STSs on all turbine units with a bypass system to tailwater
Adult Fish Passage Facilities Powerhouse I — Bradford Island fish ladders with fish counting station Powerhouse II Cascade Island and Washington Shore fish ladders with fish counting station and fish sampling facility

2. The Dalles Dam
Location The Dalles Oregon River Mile 191.5 *Operator* U.S. Army Corps of Engineers *Completed* 1960 (14 turbine units) 1973 (8 turbine units) *Nameplate capacity* 1 780 MW *Hydraulic capacity* 375 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities Ice and trash sluiceway
Adult Fish Passage Facilities Two fish ladders with fish counting stations and fish lock (not operating)

3. John Day Dam
Location Rufus Oregon River Mile 215.6 *Operator* U.S. Army Corps of Engineers *Completed* 1971 (16 turbine units 4 more units authorized but deferred) *Nameplate capacity* 2 160 MW *Hydraulic capacity* 322 000 cfs *Type of Project* Storage
Juvenile Fish Passage Facilities STSs on 12 units with bypass system to tailwater
Adult Fish Passage Facilities Two fish ladders with fish counting stations

4. McNary Dam
Location Umatilla Oregon River Mile 292 *Operator* U.S. Army Corps of Engineers *Completed* 1957 (14 turbine units Powerhouse II is under design but has not been authorized for construction *Nameplate capacity* 980 MW *Hydraulic capacity* 232 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities STSs on all 14 units bypass system to tailwater fish collection and transportation facilities fish run monitoring station
Adult Fish Passage Facilities Two fish ladders with fish counting stations

5. Priest Rapids Dam
Location Near Ephrata Washington River Mile 397.1 *Operator* Grant County Public Utility District (PUD) *Completed* 1961 (10 turbine units) *Nameplate capacity* 788.5 MW *Hydraulic capacity* 187 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities None (spill only)
Adult Fish Passage Facilities Two fish ladders fish counting and trapping facilities

6. Wanapum Dam
Location Near Ephrata Washington River Mile 415.8 *Operator* Grant County Public Utility District (PUD) *Completed* 1964 (10 turbine units) *Nameplate capacity* 831 MW *Hydraulic capacity* 178 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities None (spill only)
Adult Fish Passage Facilities Two fish ladders

7. Rock Island Dam
Location Wenatchee Washington River Mile 453.4 *Operator* Chelan County Public Utility District (PUD) *Completed* 1933 (Powerhouse I 10 turbine units) 1981 (Powerhouse II 8 turbine units) Powerhouse I *Nameplate capacity* 212 MW Powerhouse II *Nameplate capacity* 410 MW *Hydraulic capacity* 220 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities Powerhouse I none (spill only) Powerhouse II no screening system gatewell bypass only
Adult Fish Passage Facilities Three fish ladders with counting stations

8. Rocky Reach Dam
Location Wenatchee Washington River Mile 473.7 *Operator* Chelan County Public Utility District (PUD) *Completed* 1961 (11 turbine units) *Nameplate capacity* 1 213 MW *Hydraulic capacity* 220 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities None (spill only)
Adult Fish Passage Facilities Fish ladder with fish counting station

9. Wells Dam
Location Azwell Washington River Mile 515.1 *Operator* Douglas County Public Utility District (PUD) *Completed* 1967 (10 turbine units) *Nameplate capacity* 774 MW *Hydraulic capacity* 220 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities (see status/history)
Adult Fish Passage Facilities Two fish ladders (one with trapping facility)

10. Chief Joseph Dam
Location Bridgeport Washington River Mile 545.1 *Operator* U.S. Army Corps of Engineers *Completed* 1961 (16 turbine units) 1979 (11 turbine units) 1981 (top of spillway raised 10 feet) *Nameplate capacity* 2 069 MW *Hydraulic capacity* 219 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities None
Adult Fish Passage Facilities None

11. Grand Coulee Dam
Location Grand Coulee Washington River Mile 596.6 *Operator* U.S. Bureau of Reclamation *Completed* 1942 (18 turbine units) 1974 (2 pumped storage units to Banks Lake for irrigation) 1982 (6 turbine units) 1984 (4 pumped storage units to Banks Lake for irrigation) *Nameplate capacity* 6 180 MW *Hydraulic capacity* 260 000 cfs *Type of Project* Storage
Juvenile Fish Passage Facilities None
Adult Fish Passage Facilities None

12. Ice Harbor Dam
Location Pasco Washington Snake River Mile 9.7 (from confluence with Columbia River) *Operator* U.S. Army Corps of Engineers *Completed* 1962 (3 turbine units) 1976 (3 turbine units) *Nameplate capacity* 603 MW *Hydraulic capacity* 96 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities Gatewell orifice system into ice and trash sluiceway
Adult Fish Passage Facilities Two fish ladders with fish counting stations

13. Lower Monumental Dam
Location Matthews Washington Snake River Mile 41.6 *Operator* U.S. Army Corps of Engineers *Completed* 1970 (3 turbine units) 1978 (3 turbine units) *Nameplate capacity* 810 MW *Hydraulic capacity* 130 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities Gatewell bypass but no STSs installed to guide fish into gatewell
Adult Fish Passage Facilities Two fish ladders

14. Little Goose Dam
Location Starbuck Washington Snake River Mile 70.3 *Operator* U.S. Army Corps of Engineers *Completed* 1970 (3 turbine units) 1978 (3 turbine units) *Nameplate capacity* 810 MW *Hydraulic capacity* 130 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities STSs on all units with bypass system to tailwater collection and transportation facilities
Adult Fish Passage Facilities Fish ladder

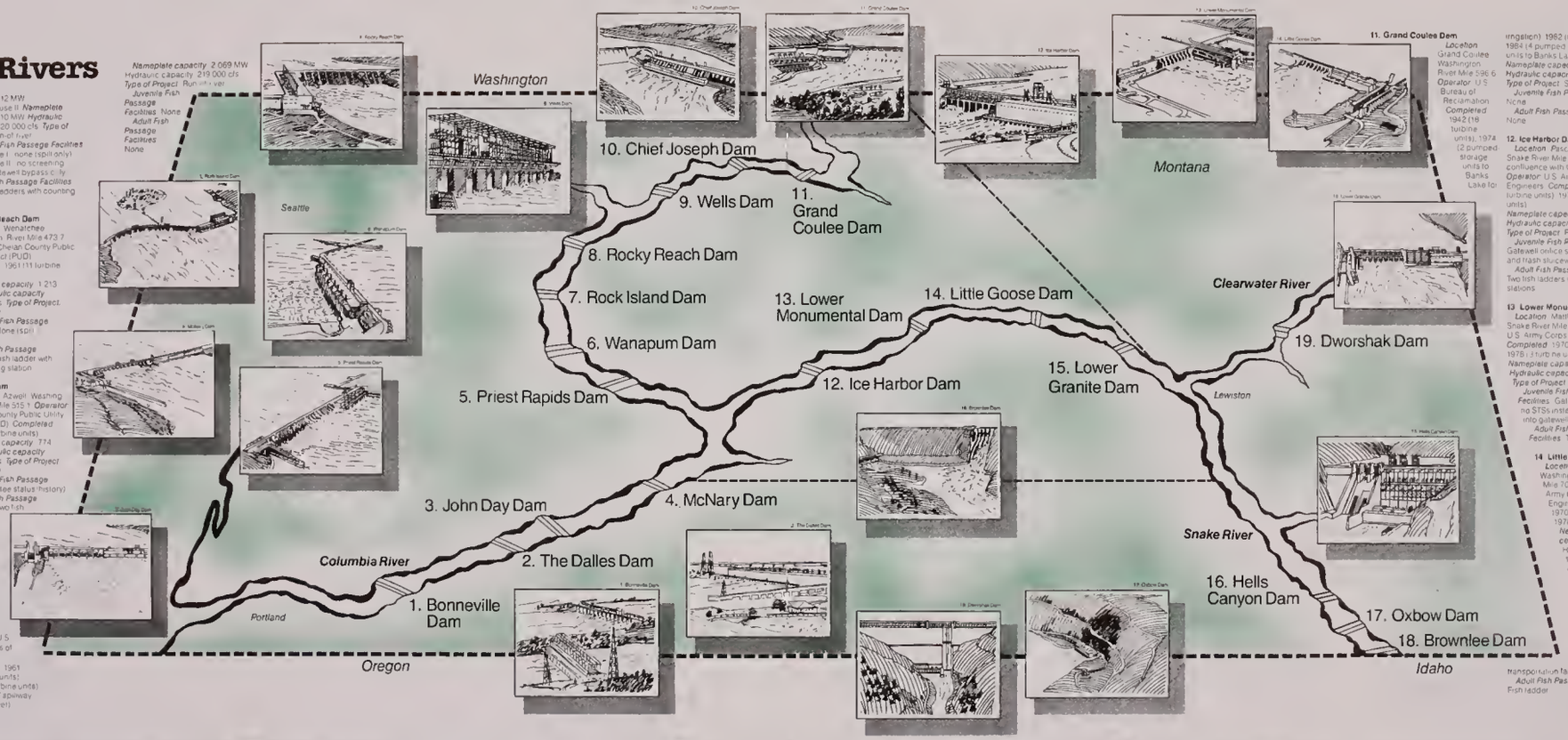
15. Lower Granite Dam
Location Almota Washington Snake River Mile 107.5 *Operator* U.S. Army Corps of Engineers *Completed* 1975 (3 turbine units) 1978 (3 turbine units) *Type of Project* Run-of-river *Nameplate capacity* 810 MW *Hydraulic capacity* 130 000 cfs
Juvenile Fish Passage Facilities STSs on all units with bypass system to tailwater collection and transportation facilities fish passage monitoring facility
Adult Fish Passage Facilities Fish ladder

16. Hells Canyon Dam
Location Oxbow Oregon Snake River Mile 247 *Operator* Idaho Power Company (IPC) *Completed* 1967 (3 turbine units) *Nameplate capacity* 450 MW *Hydraulic capacity* 30 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities None
Adult Fish Passage Facilities None (Hells Canyon Dam trap and hatchery system enables IPC to relocate Snake River runs of spring chinook and steelhead to other drainages)

17. Oxbow Dam
Location Oxbow Oregon Snake River Mile 273 *Operator* Idaho Power Company *Completed* 1961 (4 turbine units) 1978 (3 turbine units) *Type of Project* Run-of-river *Nameplate capacity* 220 MW *Hydraulic capacity* 25 000 cfs *Type of Project* Run-of-river
Juvenile Fish Passage Facilities None
Adult Fish Passage Facilities None

18. Brownlee Dam
Location Cambridge Idaho Snake River Mile 273 *Operator* Idaho Power Company *Completed* 1959 (4 turbine units) 1983 (1 turbine unit) *Nameplate capacity* 675 MW *Hydraulic capacity* 34 500 cfs *Type of Project* Storage
Juvenile Fish Passage Facilities None
Adult Fish Passage Facilities None

19. Dworshak Dam
Location Ahsahka Idaho Clearwater River Mile 1.9 (from confluence with the Snake River) *Operator* U.S. Army Corps of Engineers *Completed* 1973 (3 turbine units 3 more units authorized but not scheduled for construction) *Nameplate capacity* 400 MW *Hydraulic capacity* 10 500 cfs *Type of Project* Storage
Juvenile Fish Passage Facilities None
Adult Fish Passage Facilities None



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Drawings by LYNN NANCE-SASSER
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INTERVIEW

Allan Scholz

by Carlotta Collette

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But as early as the 1830s and '40s, Protestant missionaries were already anticipating the devastating effect white settlers would have on the tribal existence. Some of the missionaries attempted to augment the hunting, fishing and gathering that supported the tribes, by teaching agricultural practices. But even these missionaries probably never imagined that the river itself would be controlled, that the fish would be blocked from the upper reaches.

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On October 23, 1983, the tribal councils of these upper Columbia tribes, the Coeur d'Alenes, Kalispels, Kootenais and Spokanes, joined forces to try to save what was left of their world. There are no salmon or steelhead left where these tribes reside. But they have accepted a challenge and are meeting it with a level of sophistication that is as impressive today as their early ability to gather what their world provided.

With a combined membership of just over 3,000, the four tribes are now able to guide the restoration, where possible, of at least a part of the life they have lost.

Dr. Allan Scholz is the director of the Fisheries Research Center of the Upper Columbia United Tribes (UCUT). He has helped draw the tribes he serves into the circles where fisheries resource policies are made. He and his staff and students are compiling comprehensive contemporary and historical information on the upper Columbia River Basin. Their research is helping The Northwest Power Planning Council as it refines the Columbia River Basin Fish and Wildlife Program.

Photos by Carlotta Collette

Status and History of the Dams

By Beth Heinrich

1. Bonneville Dam

Status/History: During the 1985 downstream migration, Powerhouse II was closed down because the screens were providing very low fish guidance efficiencies, thereby allowing a large percentage of juvenile fish to pass through the turbines. Fish guidance efficiency (FGE) ranged between 20 percent and 40 percent, well below target levels. The Corps is conducting studies to determine the cause(s) of the poor FGE.

In the future the Corps will be developing a report to the Council on the feasibility and cost of all alternatives to achieve 85 percent juvenile fish passage efficiency as soon as the cause(s) of the guidance problem can be identified. During the 1986 migration, the Corps will be testing alternative prototype modifications to the bypass system to improve FGE.

2. The Dalles Dam

Status/History: In 1985, the Corps installed three prototype screens, but juvenile fish guidance efficiency proved disappointing. The Corps will continue prototype testing during 1986. Its bypass feasibility report to the Council for The Dalles, including preliminary design, cost estimates and fishery benefits, is scheduled for completion by December 31, 1986, nearly one year behind schedule. The Corps estimates that construction costs for installing a complete juvenile fish bypass system at The Dalles could be about $28 million. On its present schedule the Corps estimates that it will complete the juvenile fish bypass system by 1992.

3. John Day Dam

Status/History: The Corps screened nine powerhouse units in 1985 and three additional units in early 1986. Screens on the remaining four turbine units are to be completed by March 1987. The Corps estimates total construction costs for the bypass system at John Day to be $22.5 million.

4. McNary Dam

Status/History: McNary's permanent juvenile fish bypass system was completed in 1981 with the installation of the final screens. The Corps and the National Marine Fisheries Service are testing the system's effectiveness.

5. Priest Rapids Dam

Status/History: Grant County PUD has applied to Federal Energy Regulatory Commission (FERC) for a license amendment to install four more units and to raise reservoir elevation five feet. As part of the 1984 FERC Mid-Columbia Settlement Agreement, Grant County PUD is developing a juvenile fish bypass system for Priest Rapids that consists of turbine intake screens, mechanical extraction of bypassed fish from the gatewells, and transportation of juveniles to the tailrace via an open flume channel or similar means. Grant County PUD plans to have the prototype bypass facilities designed, constructed and installed prior to the 1986 smolt migration. The permanent bypass system is scheduled for completion by March 20, 1988. Grant County PUD also is studying the feasilbility of shorthaul transportation for juvenile fish at Priest Rapids and Wanapum dams.

6. Wanapum Dam

Status/History: Grant County PUD, under the 1984 Federal Energy Regulatory Commission (FERC) Mid-Columbia Settlement Agreement, is testing, evaluating and developing an enhanced spill program for juvenile fish using a forebay guidance device (1400- to 1600-foot barrier net). The permanent bypass system is scheduled for completion by March 20, 1988. Grant County PUD has applied to FERC for a license amendment to install four more units.

7. Rock Island Dam

Status/History: Rock Island was the first dam built on the mainstem Columbia. Rock Island Dam is not covered by the 1984 Federal Energy Regulatory Commission (FERC) Mid-Columbia Settlement Agreement. Instead, a FERC Administrative Law Judge accepted a proposal by Chelan County PUD to provide only spill for fish passage in 1985. FERC recently ordered Chelan County PUD to proceed with studies to evaluate bypass system alternatives at both powerhouses.

8. Rocky Reach Dam

Status/History: Under the 1984 Federal Energy Regulatory Commission (FERC) Mid-Columbia Settlement Agreement, Chelan County PUD operated a prototype screen in a turbine intake, dipped all gatewells for juvenile fish daily, and provided spill necessary to achieve a 30 percent interim bypass level for juvenile spring chinook during 1985. Due to low spill efficiency at Rocky Reach, FERC is requiring Chelan to accelerate development of the bypass system. A permanent bypass and collection system is to be installed and operating at Rocky Reach Dam by spring 1987. Preliminary results from the 1985 prototype testing were discouraging, however, and depending upon the results of further testing in 1986, the completion date may be deferred.

9. Wells Dam

Status/History: During 1985, Douglas County PUD continued to evaluate the fish bypass efficiency of a "baffle-type" spillbay bypass system, according to the terms of the 1984 FERC Mid-Columbia Settlement Agreement. Douglas County will continue installing and evaluating additional spillbay modifications in 1986 and 1987, designed to enhance fish passage through spill. Modifications should be completed in 1988.

10. Chief Joseph Dam

Status/History: Chief Joseph and Grand Coulee dams lack any fish passage facilities and thus permanently block anadromous fish from the upper Columbia River Basin.

11. Grand Coulee Dam

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12. Ice Harbor Dam

Status/History: The Corps plans to test prototype submersible traveling screens at Ice Harbor in 1987. On its present schedule the Corps estimates that it will complete the juvenile fish bypass system by 1991.

13. Lower Monumental Dam

Status/History: The Corps will be conducting biological and prototype screen tests at Lower Monumental during the 1986 juvenile passage season. On its present schedule the Corps estimates that it will complete the juvenile fish bypass system by 1991.

14. Little Goose Dam

Status/History: The Corps is considering and evaluating new designs, particularly an open flume bypass channel, to improve the present juvenile bypass system, which was completed in 1981. Modifications to the bypass system are to be completed by September 30, 1987, however, the Corps has estimated that a new bypass and collection facility at Little Goose will not be installed and operational until Spring 1989.

15. Lower Granite Dam

Status/History: The Corps is continuing to evaluate and upgrade the juvenile bypass system at Lower Granite, which was completed in 1981. The Corps' feasibility study on raising hydraulic operating gates to improve fish guidance efficiency, as well as the initial design work for test deflector and gate raise modifications, are scheduled to be completed in FY 1986. On its present schedule, the Corps expects to have all bypass system modifications completed by April 1990.

16. Hells Canyon Dam

Status/History: Idaho Power Company's Hells Canyon complex (Hells Canyon, Oxbow and Brownlee projects) s permanently blocks anadromous fish from the upper Snake River Basin.

17. Oxbow Dam

Status/History: (See Hells Canyon Dam).

18. Brownlee Dam

Status/History: Brownlee Reservoir is the major storage reservoir on Idaho Power Company's Hells Canyon complex.

19. Dworshak Dam

Status/History: Dworshak Dam is "the highest straight-axis, concrete gravity dam in the Western world" according to the Corps of Engineers. Dworshak permanently blocks anadromous fish from the North Fork of the Clearwater River. Storage releases from Dworshak assist in providing spring water budget flows in the Snake River.

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INTERVIEW

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Photos by Carlotta Collette

Q. What prompted the upper Columbia, tribes to form UCUT?

A. When Grand Coulee blocked the runs in the upper Columbia, these tribes' culture took a nosedive because they lost their primary means of subsistence. Since that time they've often been left out of fish and wildlife issues in the Columbia Basin.

Shortly after the Northwest Power Act was signed [1980, resulting in the creation of the Northwest Power Planning Council], the four tribes decided to get together to participate in the Council's Columbia River Basin Fish and Wildlife Program. They hoped to address some of the losses they had suffered. They also wanted to try to revitalize their economy.

There were also a number of non-fish and wildlife issues that affected all those tribes. They hoped that by banding together and having four tribes speaking, instead of just one, they might be able to be heard a little bit better, not just on fish and wildlife issues but on other types of issues as well. Part of it is that, for example, when the tribes go to the Bureau of Indian Affairs for assistance, the Colvilles or the Yakimas, who are much bigger tribes, have the BIA paying a lot more attention to them.

Forming UCUT was natural for these tribes because three of them spoke the Salish language. The Coeur d'Alenes, Spokanes and Kalispels were all Salish tribes. The Kootenai tribe was a little different. Its language was different from the others.

There was also quite a lot of interaction among all four tribes. For example, the Coeur d'Alenes and Spokanes shared a salmon fishery on the Spokane River. The Kalispels used to come down and fish there on a regular basis as well. All four tribes would go to Kettle Falls and fish with the Colville tribes at the Kettle Falls fishery.

In addition, the Kalispels had a lot of camas roots on an extremely large prairie near their existing reservation, and most of the tribes came there in the spring. There was quite a lot of trading back and forth—it was actually a cross-utilization of resources.

Q. Were these Stevens Treaty tribes? [***Governor Isaac Stevens, first governor of Washington state, negotiated treaties with many Northwest Indian tribes. The tribes surrendered millions of acres of land, but retained the rights to fish, hunt and, in some cases, gather roots and berries at their traditional sites.***]

A. All these tribes are executive order tribes, except for the Kootenais in Idaho. They were a party to one of the Stevens' later treaties. The rest kind of got left out of Governor Stevens' process. Stevens had planned on coming back to sign treaties with those tribes, similar to treaties he'd signed with the other tribes. For one reason or another, he never made it back. It was just sheer accident that he didn't.

After a few years the President decided to sign executive orders establishing reservations for each of those tribes. So, the tribes have very distinct boundaries, but there was no specific mention made of fish at all. The tribes have interpreted that to mean that they have their aboriginal hunting and fishing rights, not only on their reservations, but on all the lands that they traditionally hunted and fished on.

That's never been really brought up in a court case. I suspect that if it ever came into the court they would probably have acknowledged the same rights as the Stevens' treaty tribes, at least in terms of their rights to fish. Rather than trying to go to court on the fish issue, I think the UCUTs wanted to see what they could work out in the fish and wildlife program.

The UCUTs have some special problems. They were some of the first tribes affected by hydropower development. There were several dams built on the Spokane River, which was a major tributary, before any of the mainstem dams were built. There may have been one or two other dams on the Columbia system, but I think one of the very first dams that was built was on the Spokane River. One of them was fairly low down, and it effectively blocked the upstream passage of fish beyond that point.

At the time that dam went in, it was pretty clear that at least steelhead were running about as strong as they ever had. During the late 1880s and early 1900s, the chinook population declined, but I think they were on the upswing again around the time the dams went in on the Spokane River.

One of the things that's happened since that time is that the tribes have tried a number of different occupations—mining and lumbering and a variety of other sorts of things. But, at the present time, there's roughly 80 percent unemployment on almost all of those reservations.

So, while these tribes recognize that the fish and wildlife program is mainly designed to benefit fish and wildlife, they see that it is also supposed to be consistent with Indian legal rights. What they're looking for are programs that can not only benefit the resource but help solve some of their unemployment problem at the same time.

Because of that high degree of unemployment, the tribes have to rely very heavily on subsistence hunting and fishing, just to make a go of it. It really is a very serious matter. They're heavily dependent on their fish.

One of the things that will happen if we improve the fisheries is that they will increase the fishing opportunities for individual tribal members, and thereby augment their subsistence fishing.

Q. How did you get involved in this?

A. A couple of years ago, when the four tribes got together, they wrote a grant proposal to the Administration for Native Americans (ANA) to fund some technical staff for the tribes to begin participating in the fish and wildlife program. Before the ANA grant came through, the Council directed the Bonneville Power Administration to fund some participation by the tribes in developing a joint proposal between the agencies and tribes. This was the initial goals study proposal. [See "Goals Process Update" on page 18.]

With that funding, the tribes hired me. I was teaching fisheries biology at Eastern Washington University in Cheney. I went up and interviewed with the UCUT executive board, which consists of two members of the tribal councils of each of the four tribes. We had a pretty good meeting.

At that point I decided that I really didn't want to leave Eastern, so I asked the tribes if they would be interested in having me work for them but work through Eastern. So we set up a UCUT Fishery Center at Eastern for the four tribes.

I was especially interested in that arrangement because of the educational aspects that would be involved. One of the things we can do, that a lot of other tribes in the area can't, is we can offer educational programs for the Indian students. When there are people from the tribes who are interested in having their kids come to school at Eastern, we can have people go through biology programs specializing in fishery and aquatic biology. That way we can get Indians trained as fishery biologists.

The other thing we have the opportunity to do is offer on-the-job training classes out on the reservations themselves. The kinds of programs that can really help the tribes in terms of providing employment are things like hatcheries that will provide fish for that area.

In some areas, hatcheries are pretty much essential because the amount of spawning habitat in natural tributaries is fairly limited. Places on the Spokane reservation, for example, are greatly affected by reservoir fluctuations that flood the tributaries. Natural reproduction in those tributaries is pretty much precluded. If you want to develop a fishery around species like kokanee, rainbow trout and other resident salmonids, you have to go for hatchery production.

If the tribes are going to benefit, one of the ways is by operating hatcheries. They need trained people in order to be able to do that. So we have the facilities for training people before the hatcheries are built.

We have proposed amendments to the Council's fish and wildlife program mainly dealing with adaptive management strategies for hatcheries. The Council's adoptive management approach is really good for restoring or enhancing the fisheries because, while you're collecting the information to evaluate what works, you're also able to take actions to benefit the resource.

We would like to stock Franklin Delano Roosevelt reservoir [behind Grand Coulee] with some species of fish that we might have to raise in hatcheries, but we've got to monitor the effectiveness of that. So the other thing that's going to be possible to help the tribal unemployment is training enough members of the tribes to do this monitoring.

In addition, when we found out that the Council was going to compile information on salmon and steelhead losses, we started to collect scientific, historical and anthropological literature and anything that we could find that could apply specifically to the upper basin above Grand Coulee Dam.

There are a lot of historical observations about catches that were made by different tribes at certain times. For example, at Kettle Falls there are probably eight or ten different people who passed by—people such as Catholic priests, Protestant missionaries, fur trappers, people working on Governor Stevens' railroad survey, and a variety of those kinds of people. They all estimated what the catch was at Kettle Falls.

Over a period from about 1820 to the late 1880s, for example, almost everybody reported daily catches in excess of 1,000 fish. If you multiply that times the total length of the peak fishing season—about a two-month period—you come up with a rough estimate of the number of fish caught by the tribes there.

After getting all this information together about what the aboriginal run size was, and knowing what the current run size is, we tried to determine what percentage of those losses could be attributed to hydropower and what was due to other factors like logging.

To a large extent, I think that the information we've got is pretty consistent with the Council's own findings. There are no important contradictions. We wanted to provide some ideas that would indicate what the UCUT tribes feel might be appropriate ways to deal with these issues.

Since the tribes are owners of the resource, they benefit from this research and from actions taken in the fish and wildlife program. The tribes don't have any alternative. The subsistence fishery was the people's jobs, the people's food and much more. The Council's program is the best way to try to get some of this back.

Illustration by Dennis Cunningham

THE GOALS PROCESS UPDATE

by Ruth Curtis

This June, the Northwest Power Planning Council will make a preliminary decision on the extent of the electrical ratepayers' responsibility for restoring the Columbia River Basin's fish runs damaged by the hydropower system. In the next step, objectives for improving the fish production of individual stream basins will be examined.

These actions are part of the goals process, a major study the Council has been engaged in since last fall. The process is designed to define the scope of and the framework for the Council's program to protect and enhance the salmon and steelhead resources damaged by hydroelectric development in the Columbia River Basin.

Goals were not included in the original program, adopted in 1982, because swift, remedial action was needed to protect the fish, and more study was needed before goals could be discussed. They are now being developed in an extensive weaving together of research, regionwide discussions and policy decisions.

In the last several issues of *Northwest Energy News,* the process has been tracked and reported upon. Below is a description of the major current activities.

Losses and hydropower responsibility

A staff report documenting the decline of the salmon and steelhead in the Columbia River Basin was approved by the Council this February after extensive public review. The report, *The Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin,* concludes that the average annual salmon runs basinwide have declined by 7 to 14 million fish since major development has occurred in the basin. In addition, 31 percent of the salmon and steelhead habitat has been lost since 1850. (See box for additional details.)

These losses had many causes, but the Council is instructed by the Northwest Power Act to focus on those related to the hydropower system's development and operation. An issue paper dealing with the degree to which the hydropower system contributed to the fishery losses and the extent to which Northwest ratepayers are responsible for restoring salmon and steelhead runs was released for public review at the April 9 and 10 Council meeting. Council staff estimates that salmon and steelhead runs declined by 5 to 11 million fish as a result of the development and operation of the 136 hydropower projects in the basin. (This paper encompasses two issue papers formerly called "Contributions" and "Goals Package.")

Both the losses report and the responsibility issue paper were developed with the aid of the Losses and Goals Advisory Committee, composed of representatives from various interests in the Northwest.

Public comment on the hydropower responsibility issue paper will be taken at the May 14 and 15 Council meeting in Seattle, Washington, and written comment will be accepted through May 20. The Council is scheduled to make a decision regarding the size of the hydropower responsibility, in early June.

Production planning

Once the extent of this responsibility is established, production objectives for the basins of individual tributaries, known as subbasins, will be determined. Preliminary work on these objectives is already underway.

Four workshops were held this spring, at which Northwest fishery experts discussed individual geographic areas and developed alternative strategies for producing fish in the subbasins. One of the tools used is a computer model of salmon and steelhead life cycles described on page

In June, an issue paper discussing alternative production strategies will be distributed for public review. From these alternatives, the Council will make a preliminary choice, in the late summer, about specific, short-term objectives that will be the building blocks for meeting the hydrosystem's responsibility toward these fish resources. Further public comment will be sought in the amendment process next fall.

The development of production objectives is an area in which the Council will be particularly aware of the Congressional charge that the Council's fish and wildlife program "complement" the activities of the Northwest's fish and wildlife agencies and Indian tribes.

One of the Council's concerns has been to coordinate its production objectives process with ongoing negotiations in U.S. v. Oregon. This court proceeding involves the Idaho, Oregon and Washington fishery agencies and four Indian

tribes (Nez Perce, Umatilla, Warm Springs and Yakima). Originally focused on harvest allocation disputes between the tribes and agencies, U.S. v. Oregon now has broadened into settlement negotiations addressing salmon and steelhead production as well as harvest.

(To receive copies of the documents mentioned here, use the order form on the back cover.)

SUMMARY OF LOSSES REPORT

The Columbia River Basin has between seven and 14 million fewer salmon and steelhead now than it held before development began in the Northwest in the mid-nineteenth century. Furthermore, nearly one third of the salmon and steelhead habitat in the basin has also been lost.

Before development by white settlers in the 1800s, salmon and steelhead runs in the basin ranged from about 10 to 16 million fish. In contrast, the current run size averages about 2.5 million fish.

At one time, salmon and steelhead inhabited the entire Columbia River Basin up to the Arrow Lakes in Canada and below Shoshone Falls on the Snake River. Since about 1850, the estimated salmon and steelhead habitat in the entire basin has declined from about 13,000 miles of stream to only 9,000 miles, a 31 percent loss.

The report indicates that fish runs and habitat in the upper Columbia and upper Snake river areas were the most damaged by development. Much of the habitat in these areas has been permanently blocked or inundated by the federally-operated Chief Joseph and Grand Coulee dams in the mid-Columbia River area and development in the Snake River Basin, such as the privately-owned Hells Canyon Complex.

Data on historic fish runs have been gathered from every available source ranging from recorded fish counts at hydroelectric facilities and other sites to the accounts of Indian tribal elders and historical records from early settlers. Sources include historical, anthropological, and archaeological data.

Descriptions of current runs are based on adult fish counts, redd (spawning nest) surveys, and harvest records.

Impacts on fish runs of a variety of development activities including hydropower, fishing, irrigation, logging, mining, grazing, and agriculture are also examined in the report. Hydropower development in the basin has primarily blocked and altered fish habitat, and obstructed both juvenile fish passing downstream and adult fish returning upstream to spawn.

Today, there are 58 dams in the Columbia River Basin constructed exclusively for hydropower operations, with the largest concentration in the mainstem of the Snake River. In addition, there are 78 multipurpose projects in the basin which include hydropower production among their uses.

While hydropower development in the Columbia River Basin began in the late 1800s, the first major mainstem development took place in the 1930s. Rock Island Dam, the first dam to span the mainstem, was built in 1933 by Puget Sound Power and Light Company (later acquired by Chelan Public Utility District). Bonneville Dam, the first federal dam on the Columbia, was completed by the Corps of Engineers in 1938.

— DM

In The News

Process questioned on BPA program for aluminum industry

The Northwest Power Planning Council is calling for public comment on a Bonneville Power Administration proposal to purchase conservation from the Northwest's aluminum smelters. The staff issue paper raises questions about Bonneville procedures on the proposal, but does not take issue with the proposal itself.

The Aluminum Smelter Conservation/Modernization Program would provide financial incentives to promote improvements in energy efficiency at the smelters. The objective is to help the smelters compete more effectively and continue providing stable revenues to Bonneville. While the Council has no basic disagreement with these objectives, Council Chairman Robert Saxvik explained, the Council is concerned that Bonneville is not following the resource acquisition provisions set down in the Northwest Power Act.

In an issue paper called "Bonneville Conservation/Modernization Program and Resource Acquisition Provisions of the Northwest Act," the Council raises questions about Bonneville's obligations under the Northwest Power Act.

The Act stipulates Bonneville may not acquire what is called a "major resource," (a resource over 50 megawatts acquired for five years or more) before determining through a public review process whether such a resource is consistent with the Council's Northwest Power Plan. Once Bonneville has determined that it is consistent, the Council may also make its own determination of consistency.

"The Act requires this review for consistency because Congress intended that the Council's power plan ensure that the region purchase only the resources it needs and that it purchase the lowest cost resources first," according to Saxvik.

The section of the Northwest Power Act that provides for a consistency determination for major resources is section 6(c). Because Bonneville's Conservation/Modernization program is designed to acquire between 200 and 250 megawatts of energy conservation for a period of more than five years, the Council staff believes the proposal must be reviewed by the Council under section 6(c).

Bonneville believes that a section 6(c) review should be undertaken only if an individual smelter proposes efficiency improvements that would result in savings exceeding 50 megawatts. Since it is unlikely that an individual smelter would have those savings, under Bonneville's proposal it would be possible to bypass the 6(c) process, Saxvik noted. "We believe this thwarts Congress's intentions in the Northwest Power Act," he said. "Under Bonneville's interpretation, virtually no conservation program would be submitted for review."

The Council has proposed an expedited schedule for a section 6(c) review so the process could be completed with little or no delay of the Conservation/Modernization Program. Bonneville has declined to conduct such a review. At this time, the Council has no issue with the merits of the Conservation/Modernization Program, itself. "The issue here is the procedure which Bonneville is following and the precedent it could set," Saxvik emphasized.

The Council will take oral comment on the subject at its May 14-15 meeting in Seattle and is taking written comment through Friday, May 16. Written comment should be mailed to the Council's Central office, listed on page 2.

— DM

Council takes action on mainstem passage

The Northwest Power Planning Council recently voted to amend the section of its Columbia River Basin Fish and Wildlife Program dealing with downstream fish passage. An outcome of the action will be greater protection for wild and natural summer and fall chinook runs in the Snake River, runs which are currently at low levels.

The amended program measure still requires a minimum 90 percent fish survival rate at eight mainstem dams operated by the Corps of Engineers, but now covers 80 percent of the downstream runs.

The action extends spill to cover the summer runs up to August 15 as well as spring runs. Spill releases fish-laden water through a spillway that bypasses a dam's turbines. Prior to the amendment, spill was employed only when nonfirm power (hydropower over and above what is guaranteed in a dry year) was available. The new measure would allow spill even when it means diverting the water from generating firm power, thus ensuring fish protection in low-water years.

During the action, the Council rejected an additional proposal by fish and wildlife agencies and Indian tribes to increase the interim spill fish survival requirement from 90 to 94 percent. The majority of the Council felt there was insufficient evidence to indicate the change would provide any significant biological improvement in salmon and steelhead populations. Where—in the words of the Northwest Power Act—two proposals would be "equally effective means of achieving sound biological objectives," the

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Council is required to adopt the proposal with the minimum cost.

"While the states of Washington and Idaho supported a 92 percent survival rate," Council Chairman Bob Sakvik said, "in the end they voted for the Oregon-Montana position of 90 percent in order to give direction for the 1986 season. It's my view that the mainstem passage action should not be viewed as final. It will be revisited in the Council's 1986-87 fish and wildlife program amendment process, and all interested parties will have an opportunity to present their viewpoints again."

The fish and wildlife agencies and Indian tribes have already submitted an amendment seeking more spill than currently called for in the program. The Council will consider that application in the amendment proceedings.

Other considerations in the Council's current decision included fish mortality in reservoirs, according to Montana Council member Gerald Mueller. "Spilling more water to increase dam passage survival will not help if the additional fish survivors die in the reservoirs," Mueller said. He noted that the Council has called for actions designed to learn more about increasing juvenile fish survival throughout the Columbia River Basin system.

— DM

Hood River homes fully weatherized

"Behold Hood River. Go and do likewise," was the ringing proclamation at the March celebration of the weatherizing of nearly every electrically heated home in Hood River County, Oregon. Senior staff attorney, Ralph Cavanagh, from the Natural Resources Defense Council, delivered the proclamation as one of the designers of the ambitious $21 million conservation project.

The Hood River Conservation Project is a research effort set up to tap and monitor the potential of residential electrical energy conservation in a typical Northwest community.

Hood River County was selected because it sits squarely in the middle of a climatic transition zone between the maritime climate west of the Cascade Mountains and cooler, arid eastern Oregon. This location offers a sampling of Northwest climates. Hood River's housing stock also mirrors housing typical throughout the rest of the region.

The three-year project is funded by the Bonneville Power Administration and administered by Pacific Power and Light Company and the Hood River Electric Cooperative. The Northwest Power Planning Council, Pacific Northwest Utilities Conference Committee, Natural Resources Defense Council and Northwest Public Power Association all share in coordinating and monitoring the project.

This first phase, the actual weatherizing of homes, was completed ahead of schedule and under budget, according to Don Peters, from Pacific Power and Light. About 96 percent of the county's electrically heated homes —2,987 in all—were made super energy efficient thanks to the project.

Phase two, the ongoing monitoring of the program, includes 17 separate studies. Final results from these studies, which include social as well as technical concerns, will be available in mid-1987.

The project has already become a model for programs in Sweden and New York State. In Sweden, a country about the same size as the Pacific Northwest, the Swedish State Power Board is developing a large-scale conservation project like Hood River's.

Niagara Mohawk Power Company, the utility that serves all of New York outside New York City, is using the same research designs and community advisory board as were used in Hood River for their energy efficient appliance studies.

— CC

In The News

Congress urged against NW conservation cuts

Who controls the Northwest's energy future—the Northwest itself or the federal government? This is a question Northwest Power Planning Council members raised before Congress in testimony before House and Senate appropriations subcommittees holding hearings on the Bonneville Power Administration's budget in April.

The Council's main concern centers on a U.S. Office of Management and Budget proposal to cut $21.7 million from Bonneville's fiscal year 1987 energy conservation budget. The Office of Management and Budget also intervened in Bonneville's 1986 budget, resulting in significant cuts. Under the proposed cut, all conservation programs could suffer.

Assuming residential conservation (which is already at the minimum viable level) would not be cut, all other programs could be reduced by 25 percent. This includes building conservation capability in the commercial, industrial, and agricultural sectors as well as conservation expenditures for public agencies and customers. The latter is largely the model conservation standards program. If model conservation standards funds were not cut, all the other capability building programs would see a 33 percent cutback.

In 1974, Congress passed the Federal Columbia River Transmission System Act making Bonneville a self financing agency. Under this act, revenues for the agency's operation come from sales of power, not from the federal treasury. "Self-financing was supposed to free Bonneville from the uncertainties of the annual federal budget cycle so that it could operate its power marketing activities in a businesslike way," Council Executive Director Ed Sheets pointed out.

In 1980, Congress passed the Northwest Power Act, which directed the Council to conduct regional power and fish and wildlife planning and gave Bonneville new authority to finance conservation and acquire power from other resources.

"As a result, we thought we had the tools to do planning and implement programs to meet our energy needs," Sheets said, "but these tools appear to be frustrated by the proposed cuts. The Office of Management and Budget's actions raise a real question about who controls the Northwest's energy future."

Bonneville's total proposed budget for 1987 is $2.9 billion, approximately the same as its revised 1986 budget. Expenditures for building the capability for conservation include testing and designing programs so they can be put into place quickly when the region needs the power. The Council's power plan gives high priority to building such conservation capability in order to prevent more costly expenditures for thermal power plants in the future.

—DM

Calendar

March 1 - June 30—"Energy Smart Design for Commercial Buildings," a series of Northwest workshops on integrating energy efficient design into construction projects without increasing costs, sponsored by the Bonneville Power Administration. For information: MCC Associates, Inc., P.O. Box 7472, Silver Spring, Maryland 20907, 1-800-622-6200 or (301) 589-8130.

May 2, 5, & 7—"Energy Codes Enforcement Workshops" to provide training for code officials on the new 1986 Washington energy code and Super Good Cents specifications, sponsored by the Washington State Energy Office. May 2, in Everett, Washington; May 5, in Spokane, Washington; and May 7, in Yakima, Washington. For information on workshops: Gretchen Hastings, A&C Consultants, Inc., (404) 939-1047. For information on other code training opportunities in Washington: Bob Sullivan, Washington State Energy Office, (206) 586-5055.

May 7-9—"Tools for Managing Energy," annual conference of the Interstate Solar Coordination Council at the Portland Marriott Hotel, Portland, Oregon. For information: Jon Biemer, Bonneville Power Administration, (503) 230-3457, David Robison, Oregon Department of Energy, (503) 378-4040, or Lawrence & Craig, P.O. Box 40244, Portland, Oregon 97240.

May 14-15—Northwest Power Planning Council meeting in Seattle, Washington.

May 21—"Commercial Energy Forum: Understanding Building Analysis Performance from an Empirical Perspective" at the Monte Carlo Restaurant, Portland, Oregon, sponsored by the Oregon State University Extension Energy Program. For information: Susan Vogt (503) 241-9172.

May 28—"The Oil Price Collapse: Effects on Electric Utilities," at the SEATAC Red Lion Hotel, Seattle, Washington, sponsored by Clearing Up and ARTA Associates. For information: Sonja Bruce, Clearing Up, P.O. Box 9157, Queen Anne Station, Seattle, Washington, (206) 285-4848.

June 3-5—"4th Annual Renewable Energy Technologies Symposium and International Exposition" at the Anaheim Convention Center in Anaheim, California. For information: Barbara Flynn, Renewable Energy Institute, 1516 King St., Alexandria, Virginia 22314, (703) 683-7795.

June 5—Hydropower Assessment Steering Committee meeting in Olympia, Washington. Please call the central office for more information.

June 8-14—"11th Annual National Passive Solar Conference" at the University of Colorado in Boulder, Colorado. For information: Susan Burley, 2030 17th St., Boulder, Colorado 80302, (303) 443-3130.

June 11-12—Northwest Power Planning Council meeting in Idaho. Please call the central office for location.

June 21-22—"15th Annual Columbia River Short Course," an overview of the complex issues facing the Columbia River and Columbia River Gorge, presented by Washington State University and Oregon State University through the Sea Grant Marine Advisory Program. For more information: Mike Spranger, (206) 543-6600, or Suzie Higert, (206) 696-6018, Washington Sea Grant Program, 1919 NE 78th Street, Vancouver, Washington 98665.

July 9-10—Northwest Power Planning Council meeting in Washington. Please call the central office for location.

July 21-August 22—"Fisheries Data Management Using Microcomputers," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University. In Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

August 13-14—Northwest Power Planning Council meeting in Kalispell, Montana.

August 25-September 18—"Fisheries Economics," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University. In Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

Compiled by Ruth Curtis

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: not all publications are available immediately, but will be sent to you as soon as they are.)

Issue Papers

☐ Staff Issue Paper on Bonneville's Conservation/Modernization Program for the Direct Service Industries (see page 20).

☐ Hydropower Responsibility Issue paper—Columbia River Basin Fish and Wildlife Program Goals Study. (See page 18. This combines elements of issue papers previously called "Contributions" and "Goals Package.")

☐ Production Planning Issue Paper—Columbia River Basin Fish and Wildlife Program Goals Study (see page 18).

Other Publications

☐ 1986 Power Plan (Do not check if you ordered the draft plan. The final plan will be sent to you automatically when available.)

☐ 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program (A five-volume set—see page 5).

☐ Summary of 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program.

☐ Staff Report on Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin (see page 19).

Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: do not check if you already are receiving them.)

☐ *Northwest Energy News* (this bimonthly magazine)

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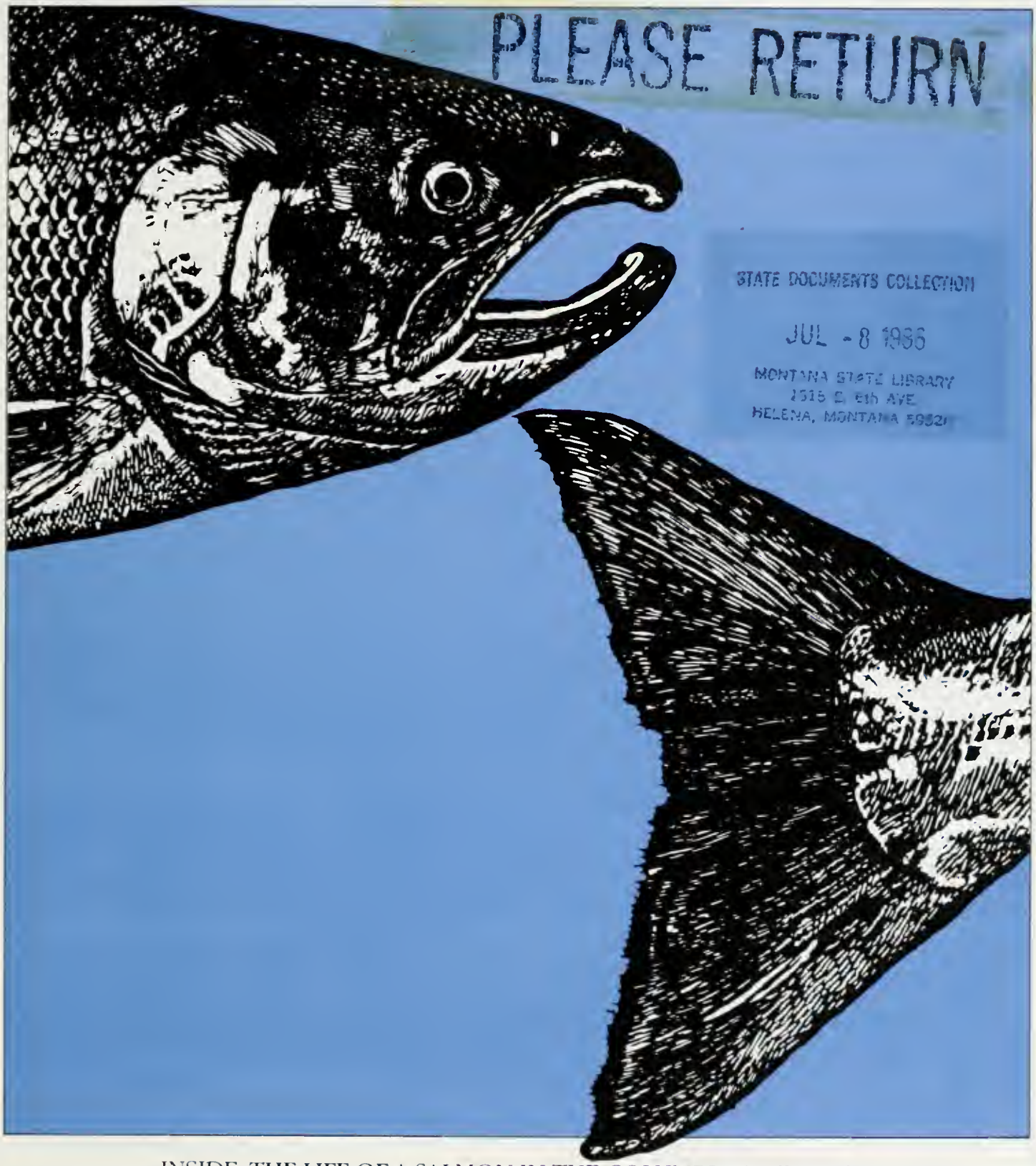
Volume 5, No. 4 | Northwest Power Planning Council | June/July 1986



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N O R T H W E S T
ENERGY NEWS
is published bi-monthly by Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205

Reprinting is encouraged. Please credit *Northwest Energy News*

The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources.

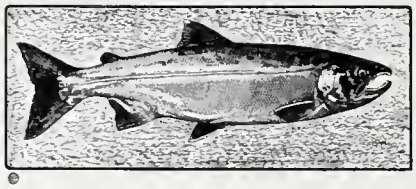
Executive Editor: Carlotta Collette
Art Director: Stephen Sasser
Special Departments Editor: Ruth Curtis
Production: Marty Todd

Editor's Notes

Summertime! In Idaho there's a celebration for a new kokanee hatchery. In Portland, Oregon the first commercial building selected for the "Energy Edge" competition is nearing completion. More buildings and more classes of buildings have been added to the program. In western Montana, Canada geese and osprey are "time sharing" nests built by the osprey, then settled into by the geese. The Pacific Northwest is buzzing with activity and there's a sampling of that activity in this issue.

We also look at the possible effects of world oil prices on the Bonneville Power Administration's repayment on page 11. And share with you an afternoon conversation with Merrill Schultz, executive director of the Intercompany Pool—an association of investor-owned utilities.

In our continuing effort to encourage participation in the Columbia River Basin Fish and Wildlife Program, Ruth Curtis, our special departments editor, has compiled information on the life cycle of Columbia River salmon and steelhead for our center spread.



COVER ILLUSTRATION: This month's cover art is reproduced from a woodblock print by Portland artist and printmaker Tom Prochaska.

Photographs: Carlotta Collette

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MONTANA'S UNCOMMON COLLABORATION

by Carlotta Collette

It wasn't just a spirit of environmentalism that spurred the Montana Power Company to sponsor studies to save small fur-bearing mammals or the resident fish of Flathead Lake. And while representatives from Washington Water Power may admit to going beyond their licensing requirements to help rebuild the fishery in the vicinity of their Noxon Rapids and Cabinet Gorge dams in Montana, it isn't altogether altruism that led to that decision either.

These investor-owned utilities are part of an unlikely team, loosely held together by the Montana Department of Fish, Wildlife & Parks and the Northwest Power Planning Council. They are working alongside the Confederated Salish and Kootenai Tribes, the Bureau of Reclamation, the Army Corps of Engineers, Pacific Power and Light Company, the U.S. Forest Service, U.S. Fish and Wildlife Service and the Bonneville Power Administration, which provides primary funding for the research. They are all trying to figure out ways to preserve and restore fish and wildlife populations in northwestern Montana. And they're doing it because it's good business for all of them.

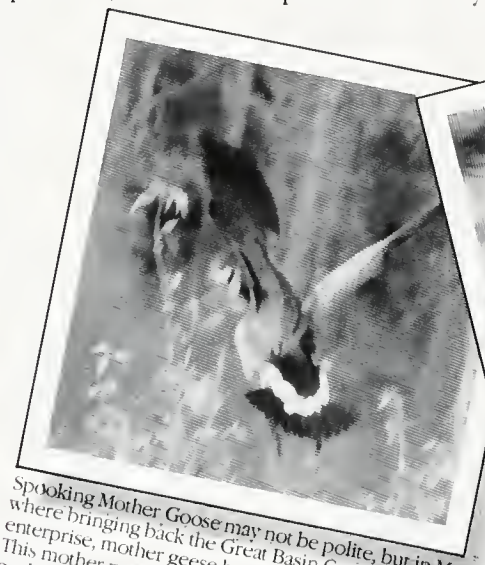
Photographs: Carlotta Collette

Don Sprague, the manager of Montana Power's environmental department candidly justifies his company's involvement in the multi-million dollar project. When the Northwest Power Act of 1980 ordered equitable treatment with power for fish and wildlife in the Columbia River Basin, he says, "we talked to several attorneys to see how we needed to relate to it. We were concerned about spending ratepayers' money when some of the dams were over 70 years old. We were also convinced there was a mosaic of impacts layered on each other that had all contributed to the fisheries' decline."

Ultimately, however, Sprague continues, "We decided we'd rather spend our money on the resource than on lawyers' fees. Our objections could get us tied up in court for years, and nobody would benefit."

At about that point in the decision making, the Montana Department of Fish, Wildlife & Parks (MDFWP) arrived with its piece of the Columbia River Basin Fish and Wildlife Program (written by the Council pursuant to the Power Act) and what Sprague refers to as a "very reasonable set of proposals." Sprague points out that, with the Department, "we're working in the real world. Other state agencies are pretty vague. They still seem to be saying—'You damaged it, you have to replace it.' With the Montana Department, we can come back on each proposal if we disagree or if we feel we can do something for less money. Each step has been negotiable, cooperative. We don't have time to fight with them. We're professionals handling professional matters. We may disagree sometimes, but we disagree amicably."

Washington Water Power representatives concur. Although their own environmental reparations in Montana have been going on for over three decades, they say the Northwest Power Act added impetus to get everyone on board. "We're neighbors, too, no different than other businesses in the area," explains Roger Woodworth, fish and wildlife biologist with the company. "To the extent that it's reasonable and practical, we'd like to spend our money locally, to benefit our resources."



Spooking Mother Goose may not be polite, but in Montana, where bringing back the Great Basin Canada Geese is a serious enterprise, mother geese have to put up with a few surprises. This mother was flushed from her nest only hours after her goslings hatched. While she stood within squawking distance, her six youngsters were given red eyeliner to identify them as they emerge from the nest to forage for food.

"Montana's a fine state," he stresses. "We can work with people here, not just debate issues. Other states seem to just have confrontations. Of course, a lot of what makes it work is the Department's consistent focus and level of cooperation. They know what they want, and they're willing to work with everyone to achieve that. It makes it really pleasant to work with them."

This level of professionalism and cooperation impressed members of the Northwest Power Planning Council at their meeting in Missoula, Montana in April. John Fraley, one of MDFWP's coordinators of the many fish and wildlife studies underway, presented a video tape overview of work in progress in the Flathead Valley. A panel of representatives of the various participants in the restoration also described their work and responded to Council questions.

Council Chairman Bob Saxvik commended the group for their "leadership in advancing the work of the Columbia River Basin Fish and Wildlife Program." Montana Council member Gerald Mueller proudly joined in the praise for his

"We decided we'd rather spend our money on the resource than on lawyers' fees."

state's successes, adding that he was pleased to see Montana illustrate "how things can really be done. I hope we can see more and more of this activity both in Montana and in other states as well," he added.

The work going on in Montana is evidence of that state's serious attachment to its great open spaces. Montanans annually spend more than $220 million on the pursuit of big game, birds and waterfowl, and salmon and trout. And few sites in the state are more generously outfitted with fish and wildlife and topographic grandeur than the valley through which flow the Flathead, Kootenai and Clark Fork rivers. Backed up against the Swan Mountain range of the Rockies, the Flathead Valley wears a pearly string of snow caps around its perimeter. The lakes and reservoirs that reflect this view are deep, cold and clear. Spectacular Glacier National Park rises up from the northern edge of the valley.

While there are no ocean-migrating salmon and steelhead there, Dave Cross, of the Confederated Salish and Kootenai Tribes, explains that "our resident fish stocks [fish that only migrate within freshwater reaches, e.g., rainbow, bull and cutthroat trout and kokanee salmon] are no less important to our people up here than the anadromous [ocean-migrating] salmon and steelhead are to people in the lower Columbia Basin. The goal of all of this work is making all fish and wildlife a consideration for power system operators, so there will be better utilization of all of our resources."

One hears expressions such as "holistic approach," "ecological systems" and "the new age for fish and wildlife" when speaking with almost any of the Montana project participants. The state's approach is unique in that fish and wildlife are being studied together because, according to Cross, the resources are all "intricately tied together. There's no way to separate them."

The projects of particular concern to his tribes are good examples of this linkage. They involve the Hungry Horse Dam on the South Fork of the Flathead River, the river itself, Flathead Lake through which the river pours, and Montana Power's Kerr Dam, at the outlet of the lower Flathead River at the base of the lake. Cross explains the effect of dam releases at Hungry Horse in terms of erosion below the dam, problems with fluctuating water levels in the lake that affect nesting birds, geese and resident fish populations, and problems that are passed on to Kerr Dam below Hungry Horse. "If Hungry Horse discharges, it affects all of the lower river," he argues. "You can't do something to one end of this system without affecting everyone else."

Photographs: Carlotta Collette

Hungry Horse Dam on the South Fork of the Flathead River in western Montana.

MDFWP's Fraley agrees. He describes this work as "a set of restoration steps to link together various projects." The Montana efforts could result in flow restrictions at some of the nine dams in the study area, the construction of hatcheries to supplement natural fish populations (see related news item on the opening of the jointly funded kokanee hatchery below the Cabinet Gorge Dam, page 26), acquisition of new wildlife habitat and improvements of existing habitat in the valley.

But the ecosystems in northwestern Montana used to function pretty well without all of this intervention. A flood might come in the spring, bigger than the annual runoff. Some ground-nesting geese might be flushed, and their young washed away. A bad drought could leave trout eggs dry. A few years later, the reduction in the number of returning spawners caused by that earlier drought might trouble grizzly bears and bald eagles who usually feast on the dying and dead fish.

In general though, the fish and wildlife in the basins of the Flathead, Kootenai and Clark Fork rivers were thriving when white explorers and fur traders arrived in the early 1800s. The fur-bearing animals sought by the traders were the first wildlife species to suffer from the intrusion. After only 50 years of the trade, finer pelts became scarce, and deer hides replaced them as the only fur that was still plentiful enough to be marketable.

The intricate fabric of interdependent life forms that Fraley and Cross describe was torn. The system that had been precisely balanced by food chains and other behavioral connections was disrupted.

This first destruction in the system was followed by others, as wildlife habitat was transformed into towns and railroad tracks, and hydroelectric dams restrained the rivers.

"You can't do something to one end of this system without affecting everyone else."

So while the value of the nine dams generating power and controlling flooding in the valley is unquestionable, they, nonetheless, operate at great risk to the fish and wildlife that once prospered there. What the people at the MDFWP would like to see is a careful balancing of the valuable hydropower operations and the equally valuable natural resource. Consequently, they are taking this ecosystems approach to their restoration work. They are studying the many species of fish and wildlife that have been affected by the dams in order to understand, not only how each species has been affected, but also to see how the species interact and how this interaction can be nurtured as part of an overall finetuning of the riverine and terrestrial habitats. They would like to see changes in the hydrosystem like those already in place at Hungry Horse Dam and soon to begin at Noxon Rapids.

Hungry Horse Dam was completed in 1951, immediately blocking about one-third of the spawning areas for cutthroat and bull trout migrating upstream from Flathead Lake. The reservoir behind the dam flooded 35 miles of streambed and several tributary mouths and caused major problems for fish within the reservoir. Shallow spawning fish suffered losses when reservoir levels dropped an average of 80 feet below the full level, stranding fish nests and young fish along the dry beaches. Gamefish in the reservoir also lost much of their food supply with the drawdowns. Similar effects were felt on kokanee salmon spawning below the dam, when operations held back flows or released unmanageable ones.

After more than three years of studies of the problems both above and below Hungry Horse, MDFWP enlisted the cooperation of the Bureau of Reclamation, which operates the dam, and the Bonneville Power Administration, to restrict flows from Hungry Horse during the spawning season.

Similar problems are being studied at all nine of northwestern Montana's hydropower projects, and similar levels of cooperation appear to be forthcoming. With the Columbia River Basin Fish and Wildlife Program providing the backbone for all of the integrated projects, and the uncommon collaboration of nearly everyone with a possible role to play, there is great promise for the future of the trout and salmon, the small furbearers and big game and the many birds and waterfowl in northwestern Montana.

REWORKING THE PROGRAM

by Carlotta Collette

There's another transformation in the works for the Columbia River Basin Fish and Wildlife Program. The call for recommendations to amend the program went out last summer, and more than 80 proposals for changes or new emphasis were received.

Of special interest are amendment applications concerned with major mainstem Columbia and Snake river issues. These include proposals related to accounting procedures for the water budget to aid downstream salmon and steelhead migrations, spill of water to help fish past dams operated by the U.S. Army Corps of Engineers, and the Corps' proposal to increase the transportation of juvenile salmon and steelhead on barges and trucks, to move them past the dams. The Northwest Power Planning Council heard applicant briefings and public comment on these mainstem issues at its June meeting in Idaho.

The remaining proposals are currently being reviewed by Council staff in preparation for release of a draft amendment document, which will be available for public review September through mid-December. The staff is informally consulting with applicants and other interested parties through July. Judy Allender, in the Council's central office (see inside front cover for phone number), is scheduling opportunities to discuss specific amendment issues with the appropriate fish and wildlife division staff.

This schedule, revised from an earlier plan, will allow for a longer public comment period next fall.

What are the concerns?

The applications that have been received rekindle earlier questions in the basin and raise a few new ones. Fish and wildlife agencies and Indian tribes, for example, are recommending increased spill levels at U.S. Army Corps of Engineers' dams in the mainstem of the Columbia and the lower Snake rivers. In February, the Council rejected an identical proposal but extended the spill period to cover summer migrations.

Several other proposals deal with accounting for use of the water budget (the body of water released from the dams to aid downstream juvenile fish migrations) and related institutional processes through which the water budget is implemented.

New hatcheries for both salmon and steelhead and resident fish, such as bull and cutthroat trout and kokanee, were recommended in several applications. At least six new hatcheries have been submitted as proposals to be added to the fish and wildlife program.

The U.S. Forest Service and other agencies have proposed several measures to increase natural production of salmon and steelhead in the Columbia River Basin. These measures include clearing obstructions to fish passage on tributaries in the basin where spawning and rearing habitat exists above the blockage, and improving existing habitat to provide better cover, resting areas and streambank stabilization. In addition to these proposals, seven more fish passage improvements have been recommended for the Yakima River Basin, where work is currently underway to open passage to the habitat that remains intact above irrigation dams.

Applicants also proposed that ratepayers fund fish and wildlife agencies and Indian tribes to carry out planning efforts on subbasin fish production, and that Bonneville develop enforceable conditions for fish and wildlife protection that would apply to generating resources attempting to gain access to the Northwest/Southwest Intertie. The intertie is the powerline on which electricity is transported from the Northwest to California markets.

Other planning issues

Major studies will be producing results this year, and it is the Council's intent to integrate at least some of the findings from these efforts into the newly amended fish and wildlife program. The first of these is the Section 201 Goals Study to provide a framework for the salmon and steelhead restoration in the basin. (See Goals Study Update on page 17.) Products from this study will include a Council statement of salmon and steelhead losses in the Columbia River Basin, an estimate of the hydropower-related portion of those losses, a series of systemwide policies to help replace those losses and a set of salmon and steelhead research objectives.

The amendments will encompass proposals by the Montana Department of Fish, Wildlife, and Parks to counter the effects of operations at Hungry Horse and Libby dams on wildlife species in western Montana.

The Council will take final actions on the amendments next February.

Model Conservation Standards:
Encouragement for Early Adopters

by Jim Nybo

With its new "Early Adopter" program, the Bonneville Power Administration is fulfilling a commitment made in January to the region's state, local and tribal governments. The brightest star in the model conservation standards support constellation, the program gives direct aid to governments adopting model standards-level codes, or to electrical utilities adopting legally enforceable utility service requirements.

In a letter to Bonneville Administrator Peter Johnson complimenting the agency on its timely and constructive action, Northwest Power Planning Council Chairman Robert Saxvik said, "By your actions, you have provided a first rate example of regional cooperation." Chairman Saxvik added the commitment of the Council to "assist in being an active and constructive force in enlisting adopters and helping make the program successful."

With the completion of the Council's 1985 review and amendment of the standards and the decision by the U.S. Ninth Circuit Court of Appeals affirming the Council's analytical method in developing them, regional attention is now turning to adopting the model conservation standards as codes or utility service requirements.

The early adopter program is just one part of a broad regional support network for governments, electrical utilities, and the shelter industry, as the region begins to implement the standards that call for energy efficiency in new electrically heated homes and commercial buildings.

Another important part of the support network is the Super Good Cents program for utilities. Super Good Cents is Bonneville's marketing program to promote adoption of the standards.

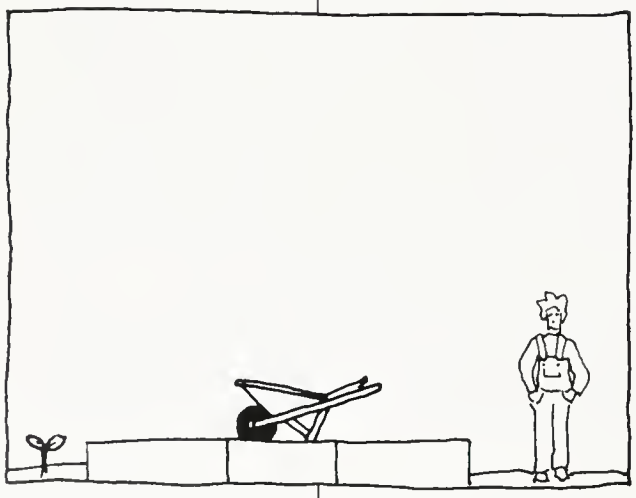
THE EARLY ADOPTER PROGRAM

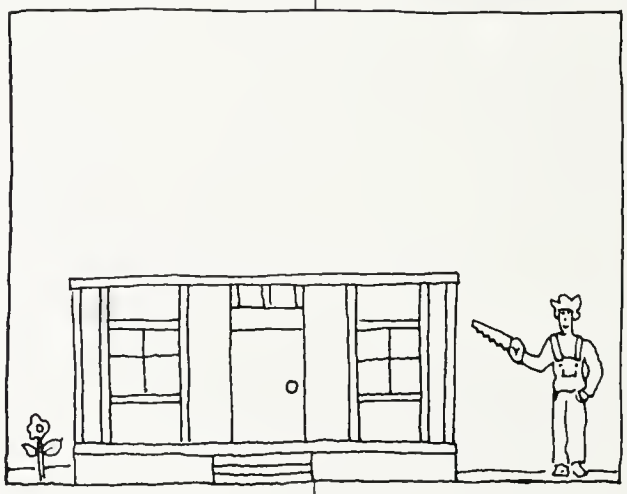
At a May 9 meeting with state, local, and tribal representatives from across the region, Bonneville Assistant Administrator for Conservation Steve Hickok and Residential Conservation Division Director Sydney Berwager described the features of the new early adopter program. It provides for local full-time staff with technical expertise; reimbursement for plan review, on-site inspection costs, and administration of the incentive program; training for code enforcement staff; and substantial builder payments.

Now that Bonneville has announced the main features of the program, the agency is preparing the formal program solicitation notice for participants, which is expected in early July.

Major features of the Early Adopter Program

- A one-time lump sum adoption and incidental start-up cost reimbursement of $8,000-$17,000, depending on the level of building activity.
- A one-time training allowance of $850 per enforcement official trained.
- Funding for countywide technical assistance ranging from $10,000 to $100,000 for the jurisdiction in the county best able to provide countywide assistance to all build-





ers. The funding level is based on the level of building activity. A county with 50-200 new housing starts a year would receive $50,000 per year in 1986 and 1987. This number declines in 1988 to a range of $8,000 to $80,000, with that same county receiving $40,000.

- Reimbursement for implementation and enforcement activity at a rate of $125 per single family residence in cities and $150 in counties. Different reimbursement levels apply to multifamily and commercial buildings.
- Builder incentive levels in climate zone I (western Washington and Oregon) are set at $3,200 per single family residence in 1986 and 1987, declining to $2,700 in 1988. Payments in climate zone II (Idaho and eastern Washington and Oregon) and climate zone III (Montana) are $3,800 in 1986 and 1987 and decline to $3,300 in 1988. There is a separate payment schedule for multifamily structures, while no payments are offered for commercial buildings. An additional $50 per building will be provided to the enforcing jurisdiction to cover the costs of administering the builder incentive program.

THE ENERGY CODE HOTLINE

When code officials around the region first began to learn about the model conservation standards, they asked for three things: a support system to answer their questions about the standards, actual codification of the energy standards into an enforceable building code document, and a published manual reflecting various building practices that are accepted means of building to the standards.

The principal mechanism for answering code official questions is the energy code hotline. Available only to code officials, the hotline began functioning in January and is operated by the International Conference of Building Officials (ICBO). There is a toll-free hotline number for each state. The hotline provides energy code interpretation and application information five days a week. The operators are experienced code officials.

The hotline includes energy product information and uses a specially developed data base. All code interpretation questions and answers are added to the data base, by state. Every two months the data base is printed out and distributed by ICBO to code officials throughout the region to be added to the Manual of Accepted Practices, mentioned below. Working out of ICBO's new regional office in Bellevue, Washington, the hotline operators have access to ICBO's extensive energy code library and video tape catalogue, as well as to specialists in the energy agencies of the four states.

PUBLISHED ENERGY CODES AND THE MANUAL OF ACCEPTED PRACTICES

The model conservation standards spell out energy saving features of buildings, but are not in themselves an energy code. They have been put into the format of an energy code, however. For those states where Chapter 53 of the Uniform Building Code is familiar (Oregon and parts of Idaho), the Council has published the "Model Conservation Standards Equivalent Code." For states that are familiar with the 1983 Model Energy Code of the Conference of American Building Officials (Washington, Montana, and parts of Idaho), Bonneville has published "Model Conservation Standards Equivalent Code Amendments to the Model Energy Code 1983."

Since it is up to the building official in each jurisdiction to interpret and apply the code, information sharing on how others are interpreting and applying the code and on various different building practices which are acceptable is important. This is being facilitated by Bonneville's support of a "Manual of Accepted Practices," a publication which provides this sort of communication.

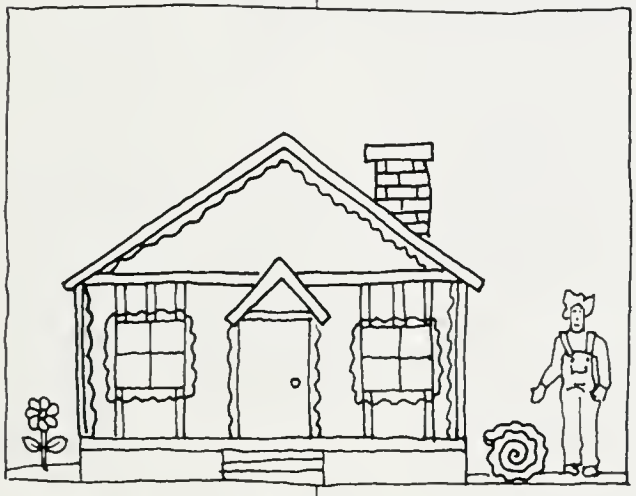


Illustration Lynn Carson

STATE ENERGY OFFICES: INFORMATION, TRAINING AND TECHNICAL ASSISTANCE

For several years, each of the four state energy agencies has participated in a state and local government technical assistance program. In recent years, model conservation standards technical support has become a major feature of these programs. The states are now fully able to provide technical training on energy efficient building practices and numerous other support services. They provide the technical workshops for the Super Good Cents utility energy efficiency marketing program, and they may be the best place for local builders and local government officials to turn to have their questions answered. Local electrical utilities, especially those that offer the Super Good Cents program, are another excellent source of information and assistance.

The network of support described above is a cooperative one. Interested utility or local government officials, or builders can feel comfortable contacting a Bonneville local office, a state energy office, a local government association office, or the Northwest Power Planning Council for referrals for assistance. The Council's power plan identifies regional cooperation as the path to solving the Northwest's electrical energy problems. The region is following this course right now with the model conservation standards.

LEARNING FROM THE FIRST ADOPTERS

In 1984 and 1985 several jurisdictions in the State of Washington adopted model standards-level building codes, and one utility adopted a utility service requirement. Jurisdictions adopting codes include the City of Tacoma, Grays Harbor County, and the municipalities of Stanwood, Elma, McCleary, and Republic. Using its authority as an electrical utility, Tacoma City Light has adopted a utility service requirement which is enforced in the utility service area outside the incorporated city limits of Tacoma. Already there have been important dividends to the region from these early adopters.

The current adopters are, in a way, pioneers, providing a wealth of experience for the jurisdictions that will follow their lead. They have shown that it can be done. Based on accounts from adopting jurisdictions, it is working well. Code enforcement officials as well as builders and elected officials from adopting jurisdictions have been willing to pass on their experience to others. An on-site visit to a model standards building under construction or a conversation with a building official or an elected official can be very helpful to a jurisdiction considering adoption.

Notice of Filing of Petitions for Review

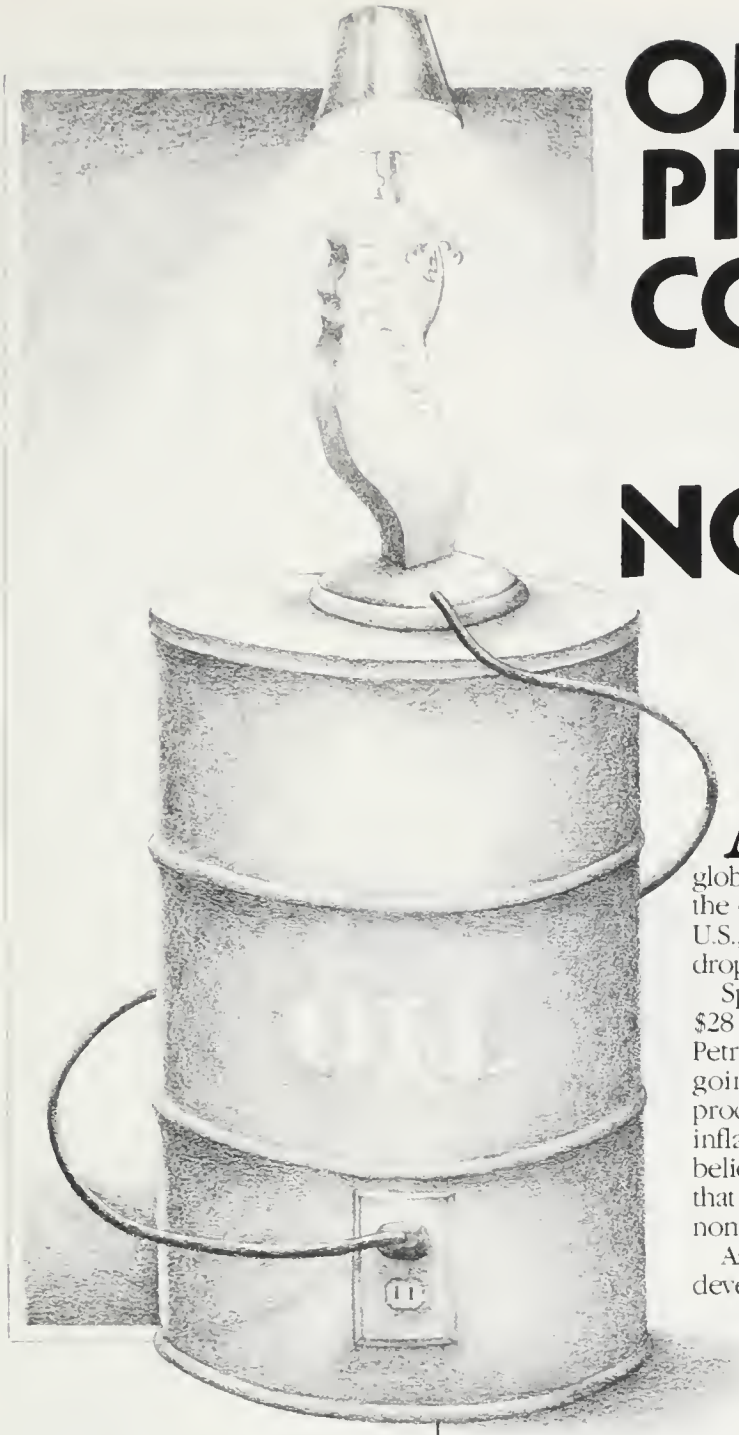
Three petitions for review of the Council's amended model conservation standards, adopted by the Council on December 4, 1985, (see 51 Federal Register 7364, March 3, 1986) have been filed in the United States Ninth Circuit Court of Appeals. The court has determined that notice of these petitions can best be given to interested persons by publication in *Northwest Energy News*.

Ninth Circuit case number 86-7243 was filed on April 30, 1986, by petitioners Seattle Master Builders Association, et al., against the Northwest Power Planning Council as respondent. Petitioners requested the court to review the amended standards adopted by the Council on December 4, 1985. The petition did not specify any particular aspects of the standards for which petitioners seek review. The petitioners' attorneys are John W Hemplemann, Paul Sikora and Michael B King of Diamond and Sylvester, 2600 Columbia Center, Seattle, Washington 98104 (206-623-1330). Any person desiring a copy of the petition should contact the above-named attorneys.

On May 1, 1986, a petition was filed by Case (an unincorporated association), the Utility Reform Project, et. al., as petitioners against the Northwest Power Planning Council as respondent in Ninth Circuit case number 86-7245 Petitioners requested that the court review and modify or set aside those portions of the amended model conservation standards dealing with new commercial buildings, existing residential buildings, direct service industry and governmental customers of the Bonneville Power Administration, utility conservation programs relating to existing residential buildings and industrial and irrigation customers of utilities, and model conservation standards for buildings converting to electric space conditioning. Petitioners did not challenge the Council's standards for new residential construction. Attorney for petitioners is Linda K Williams, 2527 S.E. 17th Avenue, Portland, Oregon 97212 (503-239-7179). Any person requesting a copy of the petition should contact Williams.

On May 2, 1986, the Northwest Conservation Act Coalition and Natural Resources Defense Council as petitioners filed a petition for review against the Northwest Power Planning Council as respondent in Ninth Circuit case number 86-7247. The petition challenged the model conservation standards for conservation in new commercial buildings, standards governing the energy efficiency of buildings that convert to electric space conditioning, and standards for utility-financed incentives to conserve electricity in existing houses. The petition specifically declined to challenge the residential model conservation standards dealing with new single and multi-family housing or utility programs that address such housing Attorney for petitioners is Ralph Cavanagh, Natural Resources Defense Council, 25 Kearny Street, San Francisco, California 94108 (415-421-6561). Any person requesting a copy of this petition should contact Cavanagh.

The statutory period for filing petitions for review of the amended model conservation standards ended on May 2, 1986. See 16 U.S.C. § 839f(e)(5).



OIL PRICE COLLAPSE... A NORTHWEST IMPACT?

by Dulcy Mahar

A relatively sudden and sizable shift in one of the world's major energy resources is bound to have global reverberations. The Northwest, though not affected to the extent of oil producing regions such as the Southwest U.S., is nevertheless feeling the repercussions from dramatic drops in world oil prices.

Spot market prices for crude oil have plummeted from $28 a barrel just last December—when the Organization of Petroleum Exporting Countries (OPEC) declared it was going after a bigger share of the market by boosting production—to $13 a barrel this spring. When adjusted for inflation, this is the lowest price since 1974. Most experts believe the OPEC strategy is to keep oil prices down to a level that will stimulate demand for oil and eliminate or weaken non-OPEC oil producers.

As part of its job to monitor electrical energy resource developments, the Northwest Power Planning Council staff has done a preliminary analysis of oil price impacts on the Northwest. Specifically, the Council staff has looked at impacts on the 1986 Northwest Power Plan and on Bonneville Power Administration revenues. Power Planning Director Jim Litchfield cautions that this is only a "sensitivity test," not a forecast of what actually will happen. "We looked at several 'what ifs' in the event oil prices stay low," he explains.

While there is a potential for substantial impacts, Terry Morlan, the Council's manager of demand forecasting, says it is too early to tell if the dramatic oil price drop is a temporary aberration or a long-term trend. He tends to believe that prices are likely to be cyclic, that is, both up and down over time.

A Council staff issue paper on the subject hypothesizes, "An oil price rebound would be plausible because lower oil prices carry the seeds of their own destruction. Lower prices will tend to increase the demand for oil and also to reduce the supply of oil ... The resulting market tightening will tend to increase the market share of the OPEC producers thus returning some of their market control that has been lost recently. This control, combined with the pain felt by OPEC economies from the current price collapse, could provide the conditions for larger price increases in the future." But Morlan is quick to point out that he isn't expecting a "quick rebound to something like last year's levels."

Lower oil prices will mean that California's oil-fired generation will be cheaper, and there will be less need to buy the Northwest's surplus electricity.

Illustration, Joan Barbour

In view of this uncertainty over what will actually happen, Morlan and Litchfield do not see any reason to rewrite the power plan at this time. Litchfield notes, "The Council's power plan is a long-term plan, and it takes into account short-term fluctuations." In fact, the power plan anticipates a drop in oil prices between 1985 and 1990, for both the low and medium-low demand forecasts. In the low growth scenario, oil prices would drop (in real terms) to $13 a barrel by 1990.

If such low prices were sustained for some time, there would be what Morlan calls a "moderate" impact on the plan's medium-high scenario. This would mean that at the end of the 20-year planning period, demand for electricity would be 4 percent below what the plan's medium-high outlook now calls for. The average annual demand growth would drop from 1.8 percent to 1.6 percent in the medium-high forecast. "It's well within our forecast range," Morlan stresses.

"In the long run, the effects of lower oil prices are beneficial to the region, but there are some short-term effects that could be negative," he explains. Oil prices affect both the demand and supply side of electricity. They lower the demand for electricity, because they offer an attractive alternative in terms of cost.

This can have a positive impact on ratepayers, Litchfield explains. "There's a cost to electrical load growth. We have to add higher cost resources." With lower demand for electricity, the current surplus will last longer and the region will need fewer new resources. When it does need new resources, lower fuel prices for plants using fossil fuels will reduce the cost of generating electricity. As a result, the real price of electricity should drop. The sensitivity tests indicate a drop of around 2.6 mills, or 7 percent lower than in the power plan's medium-high forecast.

The most serious impact of lowered oil prices will be on the Bonneville Power Administration. Currently, 24.3 percent of Bonneville's (non-exchange) revenues comes from marketing electricity outside the region—with California the principal buyer. Lower oil prices will mean that California's oil-fired generation will be cheaper, and there will be less need to buy the Northwest's surplus electricity, unless that surplus can compete in price.

As Bonneville revenues drop, either because it loses California sales or drops its secondary power rates to remain competitive, it may face the problem of meeting its fixed debt repayments to the federal treasury or raising its wholesale power rates. Ironically, as far as the Northwest is concerned, this rate impact could be canceled out by the lower rates caused by lower demand and lower power generation costs.

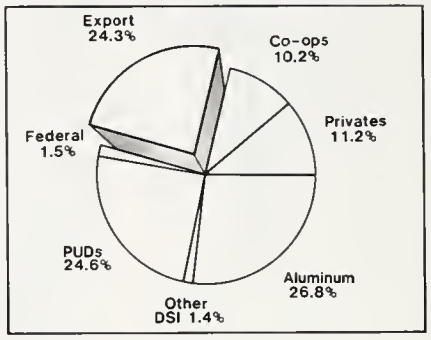
However, the two rate impacts would probably not occur at the same time. The impact on Bonneville would be more immediate, so that Northwest ratepayers would feel the pinch in the near future. Ratepayers would then see a reversal, with positive impacts, in the latter half of the 20-year planning period.

Changing electricity prices isn't the only possible impact of lower oil prices. The mix of resources used to produce electricity could also be affected. A resource is cost effective only in relation to another resource. If oil prices were to remain low for some time, they would affect other resources available to the Northwest. That could mean a change in the Council's resource portfolio. The portfolio is the section of the power plan that outlines the type, quantity and schedule for developing resources in order of cost effectiveness. As the price of one resource drops, the relative values of other resources change.

For example, the cost-effective level of combustion turbines that are oil or gas fired is very sensitive to oil price changes. Currently, the power plan anticipates that development of 700 megawatts of combustion turbines (to back up nonfirm hydropower) would be cost effective when the power is needed. However, continued low oil prices could mean that as much as 4,000 megawatts of combustion turbines would be cost effective. If this were to happen, this resource could replace a significant portion of the coal plants that would be needed if the Northwest were to experience high load growth. Nonetheless, Litchfield cautions, "changing the power plan to reflect a possibly temporary, low oil price would be like placing all our bets on nuclear power when oil prices are high. You reduce your ability to adapt to changing prices. You put too many eggs in one basket."

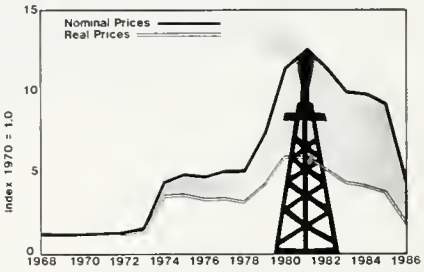
While Litchfield and Morlan reiterate the caveat that "it is just too soon to tell," they will continue to monitor oil prices, and they agree that, if extremely low oil prices seem here to stay, the plan will be reopened for public review.

BPA Non-Exchange Revenues



"In the long run, the effects of lower oil prices are beneficial to the region, but there are some short-term effects that could be negative."

Historical World Oil Prices



The Life of a Salmon in the Columbia River Basin

by Ruth Curtis

The Columbia River Basin is home to one of the Northwest's most spectacular resources—the creatures known as anadromous fish, for the most part, salmon and steelhead. The basin is also "home" for the largest coordinated hydroelectric system in the world. Unfortunately these two resources have not always mixed well in the Northwest. Salmon and steelhead are complex creatures, needing to move freely up and down the river—something the dams have made very difficult.

Because the dams obstructed salmon and steelhead passage in the river, they have seriously damaged the fish populations of the basin. But while concern over the fish losses was shared by the four states and other jurisdictions involved in both the hydropower and fish and wildlife resources, a coordinated systemwide approach was needed to save the fisheries.

To provide that coordination, Congress approved the creation of the Northwest Power Planning Council in 1980 and charged it with developing a program to protect the fish from the hydroelectric system and to restore them as much as possible. The result of the planning process that pulled together all of the resource managers was the Columbia River Basin Fish and Wildlife Program.

This year, that program is being amended (see page 7). To provide background for this amendment process, the life cycle of salmon and steelhead, the effects of the hydroelectric system on that cycle, and the Council's efforts to reduce that damage are described below.

Hatching and early rearing

Fertilized eggs of salmon and steelhead incubate in the stream's gravel and hatch into larva, or alevin, which look like tiny fish with a yolk sac attached to their bellies. In time the young fish absorb the yolk sac and emerge from the gravel to forage for food. Called "fry" at this stage, they will stay in the stream for a short period (a few days to over a year depending on the species), then begin the trip to the ocean.

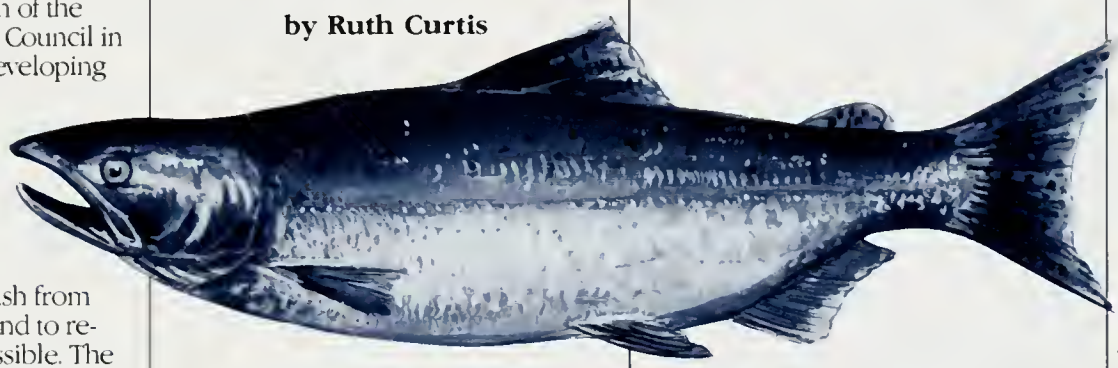


Illustration: Jerry Haworth

Downstream migration

When the fish are ready to migrate to the ocean, their bladder enlarges and their body shape alters. They become "smolt" and are preparing for life in salt water.

Traveling mostly at night and helped by the river's current, they journey downriver to the ocean. Before Grand Coulee Dam was built, blocking the upper reaches of the migration, many traveled over a thousand miles to reach the Pacific Ocean.

Problems and program measures

By storing the spring runoff in reservoirs, dams have altered the natural flows of the river system. This decreased flow, when smolt are migrating downriver, increased the time the journey takes, affecting the ability of the fish to make the transition to saltwater and increasing their susceptibility to disease and predators.

The Council's program has established the water budget—a block of water used in the spring to "flush" the fish down the river, imitating the spring runoff. It is coordinated by representatives of the fish and wildlife agencies and Indian tribes, and the dam operators and power interests.

The dams themselves are deadly to the young fish. They are frequently injured or killed by turbine blades and the extreme pressure changes experienced passing through the turbine units.

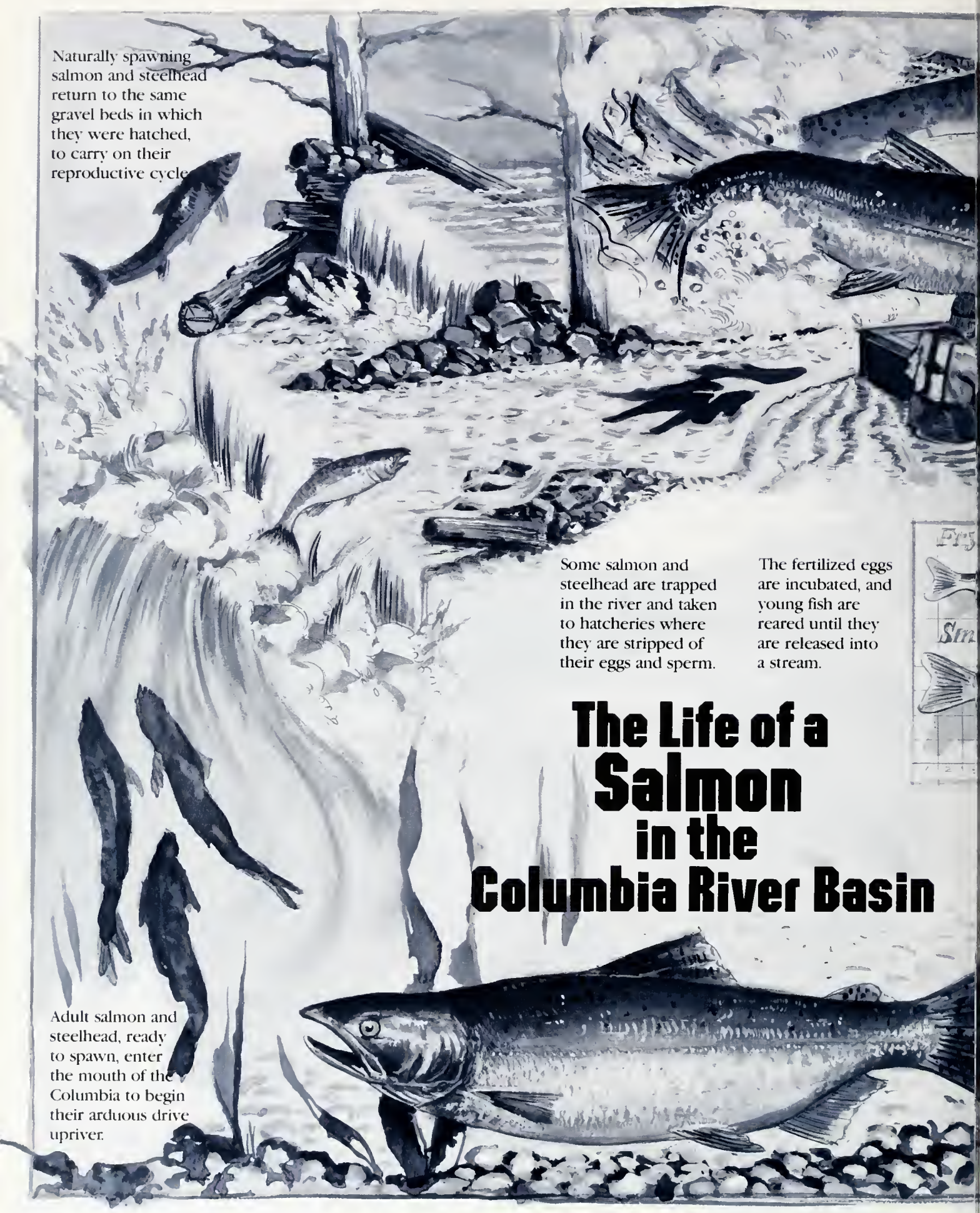
The Council has called for permanent bypass systems for each dam on the mainstem Columbia and Snake rivers. These provide a route for fish to move past the dam without entering the turbine units. Until these permanent systems are in place, the Council has called for "spill"—releasing fish-laden waters out the spillways, bypassing the turbines—at dams with low fish survival rates.

Maturing in the ocean

In the ocean, most of the fish turn north and head for the Gulf of Alaska where they scatter over their feeding grounds. They start in the ocean as plankton feeders and, as jaws and teeth develop, they progress to such food as shrimp, herrings, and anchovies. As they reach maturity they move to the coastal waters of the Northwest, seeking out the river they originated in.

Problems and program measures

While the hydroelectric system has no direct effect on fish when they are in the ocean, the health of the ocean fishery is necessary to protect investments being made in improving populations in the basin. The Council is working with harvest management agencies to ensure enough fish survive to return to the Columbia River Basin.



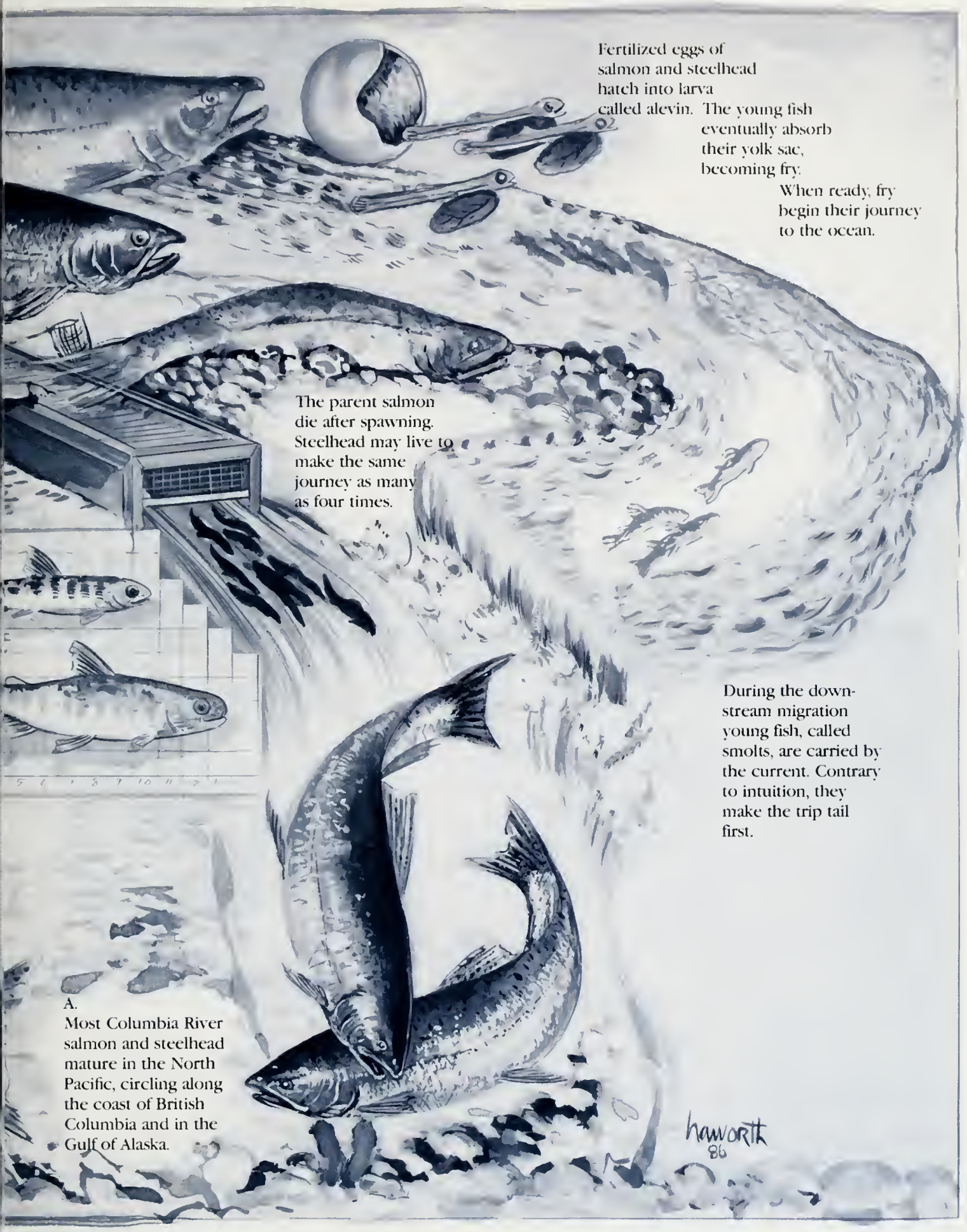
Naturally spawning salmon and steelhead return to the same gravel beds in which they were hatched, to carry on their reproductive cycle.

Some salmon and steelhead are trapped in the river and taken to hatcheries where they are stripped of their eggs and sperm.

The fertilized eggs are incubated, and young fish are reared until they are released into a stream.

The Life of a Salmon in the Columbia River Basin

Adult salmon and steelhead, ready to spawn, enter the mouth of the Columbia to begin their arduous drive upriver.



Fertilized eggs of salmon and steelhead hatch into larva called alevin. The young fish eventually absorb their yolk sac, becoming fry.

When ready, fry begin their journey to the ocean.

The parent salmon die after spawning. Steelhead may live to make the same journey as many as four times.

During the downstream migration young fish, called smolts, are carried by the current. Contrary to intuition, they make the trip tail first.

A.
Most Columbia River salmon and steelhead mature in the North Pacific, circling along the coast of British Columbia and in the Gulf of Alaska.

Upstream migration

Now begins the salmon's final journey. Starting in prime condition, they charge up the river, not even taking time to feed as they head for that particular stretch of streambed where they hatched.

Problems and program measures

Dams are a physical barrier to fish struggling to return upriver. To solve the problem, all but a few dams have fishways or ladders the fish negotiate to pass the dam. Hells Canyon Dam on the Snake River, Chief Joseph and Grand Coulee Dams on the Columbia, and Dworshak Dam on the North Fork of the Clearwater River do not have fishways and have permanently blocked salmon and steelhead from areas above them.

At some dams the fishways are inadequate or inefficient due to lack of flows to attract fish, mechanical failures of pumps, as well as other reasons. The Council's program calls for improving adult passage conditions by improving the operation and maintenance of the fishways and studying and developing flow and spill criteria for the dams.

Propagation (spawning)

Natural propagation

Once the adult salmon return to the stream where they were hatched, they begin to pair off. The female digs a redd (nest) in the gravel shallows by overturning the stones with her tail, while several males establish territorial dominance to protect her. When the female is ready to mate, eggs and sperm are released simultaneously into the redd. The female then covers the eggs with gravel. After mating, all Pacific salmon die; scavenging birds and animals will feed on their carcases. Steelhead do not necessarily die and have been known to make up to four spawning migrations.

Problems and program measures

Reservoirs created by the dams have flooded nearly all the spawning habitat on the Snake and Columbia rivers. Even in the two remaining freeflowing areas, the water level now fluctuates so much that many of the areas are unsuitable for spawning.

Fortunately the basin has many tributary streams with a great deal of potential habitat. Much of this habitat is not fully used by the fish, either because streams are blocked or it needs restoration. The Council's program is recommending the removal of obstructions, and other habitat improvements.

Hatchery propagation

On their way up the river, some adult salmon are captured and taken to a hatchery facility. There eggs and sperm are stripped from the fish, fertilized eggs incubated, and young fish reared until they are released into a stream.

Problems and program measures

Hatcheries have proved successful in supplementing dwindling runs of naturally spawned fish in the basin. However, there is mounting concern that the genetic health and resilience of the fish populations is being lost. One of the Council's primary goals is to restore wild and natural propagation of salmon and steelhead in the basin. The program puts an emphasis on the coordinated use of hatcheries as a crucial link in this restoration.

GENERAL LIFE HISTORY CHARACTERISTICS OF COLUMBIA RIVER SALMON AND STEELHEAD.

Species	Adult Migration Times	Spawning Time	Downstream Migration	Location of Spawning
Spring chinook	Jan-May	Late July to late Sept	During 2nd spring/summer	Tributaries to mainstem
Summer chinook	June-mid-August	Sept-mid-Nov	During 2nd spring	Tributaries
Fall chinook	Aug-Dec	Sept-Jan	April-Sept (before they are a year old)	Mainstem Hanford Reach
Coho	Early Oct -late Dec	Mid-Nov -early Jan	March-July (after their first year)	Tributaries-backwater areas
Sockeye	Early run-late July to early Aug; Late run Sept-Oct	Aug-Nov	April-June	Tributaries above lakes; fry then enter lakes & remain 1-3 yrs before migrating to ocean
Steelhead Summer run				
"A" group (earlier run)	June-early Aug	Feb-March	March-June	Tributaries
"B" group (later run)	Aug-Oct	April-May	March-June	Tributaries
Winter run	Nov-mid-June	Feb-June	March-June	Tributaries

Adapted from Bell, M.C., 1984, *Fisheries Handbook of Engineering Requirements and Biological Criteria*, U.S. Army Corps of Engineers, North Pacific Division, Portland, Oregon.

Suggested reading for more information:

Childerhose, R.J. and Marj Trim, 1981, *Pacific Salmon*, University of Washington Press, Seattle, Washington, 158 pp.

Netboy, Anthony, 1980, *The Columbia River Salmon and steelhead Trout: Their Fight for Survival*, University of Washington Press, Seattle, Washington, 180 pp.

Northwest Power Planning Council, 1984, *Columbia River Basin Fish and Wildlife Program*, Northwest Power Planning Council, Portland, Oregon, 138 pp.

THE GOALS PROCESS UPDATE

by Ruth Curtis

Since February 1985, the Northwest Power Planning Council has been involved in assessing salmon and steelhead losses in the Columbia River Basin and in developing a program framework to address those losses.

This process is designed to define the scope of the Council's Columbia River Basin Fish and Wildlife Program. The process addresses such issues as the extent of the salmon and steelhead losses, the limit to which electricity ratepayers should be expected to restore these fish populations, and how this investment can be most effective.

Below is a summary of the current activities in this process.

Hydropower responsibility

Salmon and steelhead annual runs in the Columbia River Basin have declined by 5 to 11 million fish as a result of the development and operation of 136 hydroelectric projects, according to a Council staff issue paper. This paper has been circulated for public comment. (For more information, see the related story on page 24.)

Salmon and steelhead planning

Having made a preliminary decision on the hydroelectric system's responsibility for the declining runs, the Council is now interested in comment on a staff paper about coordinating salmon and steelhead planning.

According to the staff paper, restoration efforts in fish production (i.e., artificial and natural production), harvest and mainstem passage must be coordinated to be effective. Each of these efforts is important to restoring the fish, and a lack of coordination decreases the value of the ratepayer's investment. The paper describes the Council's planning process through the rest of the year and seeks comments on a number of technical issues including genetics and the system-wide planning model. Public comment on the paper is being taken through July.

Work began on these approaches this past winter when the Council sponsored a series of workshops for Columbia River Basin salmon and steelhead experts. In the workshops, experts discussed alternative strategies for producing fish in the basins's subbasins. As part of the workshop process, a computer model of salmon and steelhead life cycles and a process for assessing genetic concerns were developed. Technical reports describing these products are included in the staff planning paper.

The computer model of the fish life cycles is designed to facilitate a basin-wide approach to salmon and steelhead planning. The model can help identify various biological interactions and other critical factors that affect salmon and steelhead production. The Council's staff will demonstrate the model to fisheries managers and other interested parties and get their suggestions for improving it in a series of workshops to be held throughout the region in July.

Salmon and steelhead research

The Council is also studying research priorities for the salmon and steelhead portions of its program. An issue paper, released in June, discusses what the guiding principles of that program should be and how it should complement other restoration work in the basin.

The Council is concerned that the existing approach to research in the basin may leave major gaps in our understanding of how the watershed and its salmon and steelhead interact. Furthermore, research findings may not be incorporated into policy and project decisions. It is hoped that the discussion generated by the issue paper will produce solutions to both of these problems.

Salmon and steelhead policies

All of this work is expected to culminate this fall with a staff issue paper summarizing modeling results and stating major choices for setting coordinated passage, harvest and production policies in the basin.

(To receive copies of the documents mentioned here use the order form on the back cover.)

Illustration by Dennis Cunningham

INTERVIEW:

MERRILL SCHULTZ

by Dulcy Mahar

He calls himself a Bonneville brat. Merrill Schultz, executive director of the Intercompany Pool—an association of investor-owned utilities—grew up in the power business. His father, chief engineer of the Bonneville Power Administration from 1939 to 1954, was one of the original staff appointments made shortly after the agency opened.

Schultz grew up in Portland and went to the University of Washington, where he graduated with a bachelor of science degree in electrical engineering. From there he went to Westinghouse Electric in Pittsburgh, Pennsylvania for three years, only to return like a homing pigeon to Bonneville, where he worked the next six years.

His "big break" came in 1962 when, despite his youth, he was named a negotiator for Bonneville in the Pacific Northwest Coordination Agreement. (That agreement among all owners of hydropower projects on the Columbia system governs seasonal releases of stored water for maximum power generation.)

In 1967, he went to the Northwest Power Pool, a utility coordinating group, where, as he puts it, his claim to fame was that he

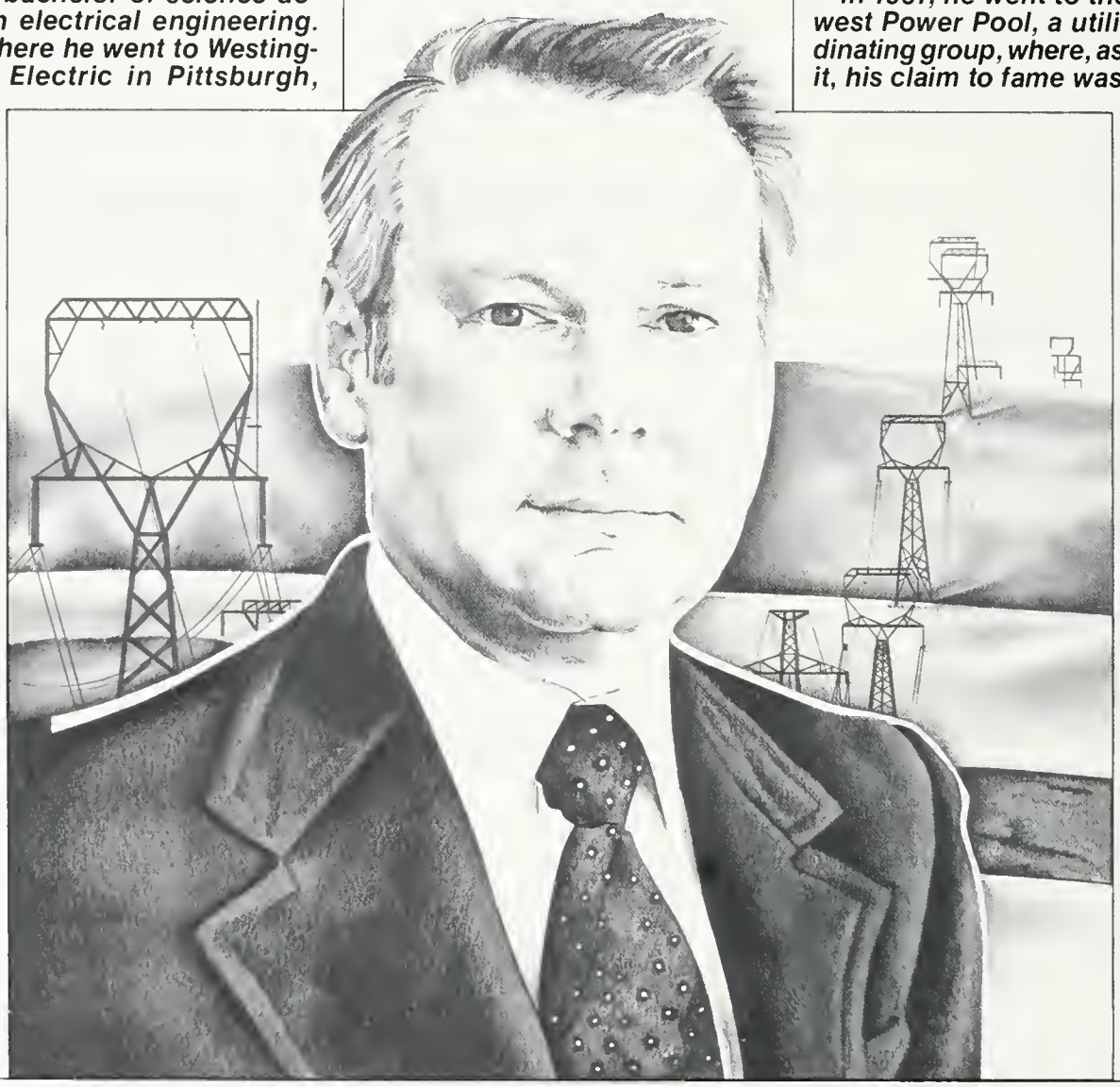


Illustration Lynn Carson

was one of the few who knew what to do with the industry's relatively new computers. He adapted power supply planning problems to computers and wrote the power pool's computer program, used to manage the coordination agreement.

In 1974, he became director of the Northwest Power Pool, which, at that time, had what is now the Pacific Northwest Utilities Conference Committee's (PNUCC) position as the voice of utilities, since PNUCC had no central staff. PNUCC assigned him to be the industry spokesman during the region's 1977 drought. As such, he was the liaison to the region's governors during the crisis when power curtailment plans were developed.

In 1980, he became director of the Intercompany Pool, an organization created in 1947 to coordinate the power operations of the region's investor-owned utilities. The organization is based in Spokane, Washington.

Q. What do you feel are the strong points of the Council's new power plan and, conversely, its weak points?

The strong points are, in general, the same strong points I found with the first plan. In the main, it is a professional, industry-like—maybe that puts the kiss of death on it—analysis of cost effectiveness. I've been pleased with the Council's planning effort in the sense that it is a conventional sort of utility analysis. It is the kind of analysis utilities should be making of cost effectiveness in the region. Its strengths are that it relies on satisfying the kinds of responsibilities we feel utilities have toward their customers, in its techniques and in its outlook. In terms of actual details, I don't find anything terribly remiss with it.

Q. In the past, you've made some reference to the Council's responsibilities and expressed the opinion that the Council occasionally strays from those responsibilities. Could you elaborate?

Our biggest problem with the plans and with the Council, on occasion, is a tendency to go for pie in the sky. This seems to reflect a lack of realization that they are responsible to put something real, something practical together. This is a concern of mine, but it is not a criticism of the fundamentals of the plan. To the contrary, the fundamentals of the plan have been done in a conventional and practical way.

This relates to one of my concerns with the approach the Bonneville Power Administration took in its recent resource strategy process. We have an [Northwest Power] Act; we have a Council, which, at least for the moment, is constitutional; and, in establishing the Act, we put ourselves in a dependent position on the Council's ability to plan.

To the extent the Council's responsibility is diluted by Bonneville doing its thing independently, the Council will have no incentive to be practical—or at least a much lessened incentive to be practical. If Bonneville asserts its own independence more and more, we will see more and more pie in the sky in the Council's activities, precisely because the Council will not be held accountable for the stuff that actually may show up on the system.

One of our great concerns when the Act was passed and one of the reasons the ICP pushed for the development of the System Analysis Model [one of the computer programs the Council uses in developing the power plan] was our concern that the Council would go flying off into space with windmills and solar cells and all sorts of novel devices whose chief virtue is sex appeal, rather than meeting customer load. To a very great extent, that concern has been put to rest.

I continue to have great respect for the Council's power planning staff and the approach they have taken to this effort. Here and there, there are still flashes of what I could consider unreality.

To the extent the Council's responsibility is diluted by Bonneville doing its thing independently, the Council will have no incentive to be practical.

Q. You mentioned your concerns with the Bonneville Power Administration's resource strategy. This is a subject that you have spoken about in fairly strong terms recently. Could you reiterate your key points?

There are several key points. Foremost was what I considered to be a fundamental lack of concern for the intent of the Act in making the Council's plan the fundamental vehicle for the region's energy future. It appeared that instead of

starting with the plan, and looking at it to see how it fit Bonneville's needs and objectives, Bonneville started from scratch on a totally independent course of evaluation and analysis. My major point was that I thought the proper role for Bonneville was to have spent this time, this effort, and this brainpower in assisting the Council.

By assist, I don't just mean hewing wood and carrying water, but setting the Council straight, when necessary, in putting together a plan that would amount to something of a consensus. Bonneville appeared to take off on its own course, doing its own load forecast, inventing its own analytical tools, examining its own options and using its own cost-effectiveness criteria. To me this is both dangerous and, I thought, a long way from what the Act intended and what it requires.

I am also very concerned that Bonneville developed its own computer model from scratch. Their new model was obviously inadequate to the task and it was different from the Council staff's model which we understood and, in fact, contributed to in some fairly major areas, and which we could check results on. That was a great waste of effort in that the Council staff had, starting with the day after the first power plan was published, embarked on a very deliberate course of building its own decision model and inviting assistance.

But, Bonneville's approach was backwards with respect to the Act, which essentially requires that the Council be the planner and Bonneville the implementer.

Bonneville's approach was backwards with respect to the Act, which essentially requires that the Council be the planner and Bonneville the implementer.

Q. You said that the Council occasionally has "flashes" of unreality. What are some specific examples?

One of the good examples that we've been wrestling with, and Senator [Dan] Evans even managed to refer to it in his talk, looking me right in the eyeballs, is the matter of combustion turbines. One of the things we're concerned about is the Council's overly sanguine treatment of our ability to construct and operate facilities that are, on the face of it, not permitted by federal law.

Another example, and one of the concerns we have right now, is the so-called West Coast Energy Study. We are concerned there will be assumptions that we can rely on energy from outside the Northwest as a way of avoiding making commitments inside the Northwest. If the opportunities are real, we will support them. Our concern so far has been that they are not as real as some people seem to think they are, based on past experience.

Q. I wanted to ask you what future you saw for nonfirm power; you've already touched on combustion turbines.

First of all, I'm a linguistic purist and I don't like a lot of verbiage. There were some on the Council who liked to reduce power planning to slogans. Firming of secondary or nonfirm power, as used in the plan, is largely a misnomer. The only way one firms secondary is by building reservoirs or by making arrangements that have the same effect as reservoirs—that is, places to store nonfirm energy and get it back on a guaranteed basis. That doesn't fit a lot of the implementation devices which have been described under that general heading.

I think there is a real place for such devices as combustion turbines. I think there is a real place for exchanges with extra-regional utilities. I also think there are some cautions that must go with those optimistic viewpoints. I think and I hope the Council and the staff are well aware of these cautions.

We do have a problem of feasibility in terms of the Fuel Use Act and other constraints on the use of some of those facilities. We do have a real concern with year-to-year rate swings that might result from dependence on high fuel cost resources. We have concerns with the fuel transportation and storage problems associated with resources that are operated intensively but infrequently. We are not advocating that such resources not be considered, but only that our concerns be addressed realistically. Our criticisms have been that the Council has not paid sufficient attention to these problems in some of its past efforts.

Q. There has been some analysis that lower oil prices will make these resources more cost effective. What are your feelings about the implications for the Northwest?

There are some people who believe the more numbers you write and the more computer programs you run the closer to God's truth you get. I am not one of those people. In my mind, the fluctuations of oil and gas prices which we've seen over the last 15 years have been only tangentially related to real economic market conditions. The price rise and fall has been mostly related to political or institutional factors which can't be very well forecast. What we are seeing is that one-by-one the things we thought we could depend on for planning are being taken away from us.

Loads have behaved in a way which obviously we didn't expect; the costs of generating facilities have shot up, stabilized, moved around. The costs of fuel of all sorts have gone all over the map. I have a real concern as to whether planning per se adds very much knowledge to what is basically a random situation—what is called, in technical terms, a drunk walk.

In face of that, the notion of depending on fairly inexpensive, short lead time facilities, even with their penalty of high production costs, is probably a smart thing to do. We don't know where we're going right now, and I don't think that beating the insides out of our computers is going to help a lot. The notion of devices such as combustion turbines, which have short lead times and relatively low capital requirements, is looking more and more like an attractive strategy.

I have a real concern as to whether planning per se adds very much knowledge to what is basically a random situation—what is called, in technical terms, a drunk walk.

Q. If planning is not very productive now—and the theme of being practical is something you reference—what would be practical now? How should we be using our time?

I think ways should be found to base our future on the ability to acquire and operate such facilities as combustion turbines—at least to the point that we might find this feasible or not. We don't know right now what would be needed.

Let's suppose we want to maintain the potential for 2,000 megawatts of combustion turbines. We need to get deeper into requirements for those facilities than the Council staff has done. We need to know where they might be located, how we get fuel to them, how much fuel storage (if they're oil fired) would be required. Let's start addressing modifications, if necessary, in the Fuel Use Act to make it possible to do those things.

I have never said that I thought those were uneconomical resources. What I have said is that the Council's analysis of them has been fairly shallow and has not answered some of the major concerns. If those concerns can be answered, let's go for it.

Planning does not consist of tearing a page of print-out off the machine and putting it in the power plan. Planning should consist of, in the Council's case, eight people with good judgment looking at these results and saying how does this computer stuff help us to make good judgments? Planning is a judgmental process, not a matter of writing a prescription on a computer printer and taking it to the resource store to be filled out.

The future of 4,000 megawatts of [direct service industry] load in the region is still very uncertain despite all the inducements provided by the variable rate, the incentive rate, Con Mod, God knows what else. The basic economy of the region is still a big question mark. Some of these things may come clearer in the future, but right now appears to be a bad time to be making any kind of serious capital commitment if the possibility exists of responding more quickly through combustion turbines.

I don't really have much patience with the discussion of whether we should be looking at 1,000 or 2,000 megawatts of combustion turbines. I don't think that's important. I believe in mixes; I believe in hedging bets; I believe in spreading eggs among several baskets.

I see nothing wrong, for example, with working diligently to try to make it possible to install a significant number of combustion turbines, while at the same time paying the preservation costs of WNP-1 and 3 and maybe even keeping the Creston [coal] plant buildable. To me this is the virtue of the very option scheme which the Council itself claims to have invented. I think they should take it more seriously than apparently they have—in terms of a mix. We want to keep a lot of options open at this point.

Q. After what you said about being a linguistic purist, I don't know quite how to ask you about the regional cooperation theme in the Council's plan. It's certainly a term that's flown under several flags, starting out with "institutional roles." Is this an idea you consider a "pie in the sky" thing or is there a practical future for it?

I don't know. Let me say I'm persuaded that there are some people who are unhappy with the agreement they made in 1980 [the Northwest Power Act]. Virtually everybody's unhappy, but some

less than others. The Act provided a structure by which Bonneville would serve as the spreader of risk and the regionalizer of cost for meeting load growth in this region. The price that some of us had to pay for our being able to depend on Bonneville in that role was the rate pool structure in which the public agencies demanded to be accorded priority to the federal base system.

In so doing, public preference was essentially changed from a supply priority to a price priority. The deal was struck. The parties made their trade-offs. There seems to be a lot of feeling that certain entities in the region, that is the public agencies, have some sort of divine right to a price advantage. As I see it, they have a right to what was provided by the Act. The Act provided a mechanism by which the cost-effective development of the federal system would be allocated. We have no axe to grind on that. We realize that the Act relegated the investor-owned utilities to a last-place position, but not nickel by nickel.

The public agencies demanded as their price for permitting the Act to proceed that they have the first right to the federal base system, including those resources under construction when the Act was passed We acceded to that. To my way of thinking, that was the arrangement that was made, and we're prepared to live with it. The publics now complain loudly that the options concept, the preservation of WNP-1 and 3, and any number of other things are unfairly visited upon them, and I just can't agree with that.

The basic economy of the region is still a big question mark.

We are prepared to cooperate regionally if the cooperation is better for us than independence. We are not claiming that it has to be better for us than it has to be for somebody else; it just has to be better for us than an independent future. We are prepared to proceed with the Act as it is written. We pay upwards of 8 mills more for power than the public agencies do. Until those two rates are equal, I'll have a hard time sympathizing with their complaint.

I made a suggestion, some time back, in response to your staff issue paper (then called institutional roles). I did it semi-facetiously, only because I knew it would be greeted with horror and shock by everybody, but I meant it seriously. I suggested that one answer to the problem of regional cooperation would be amending the Act to go to a single rate pool.

I don't see that as being a windfall for us. We're certainly not going to put a demand on Bonneville until we need power. We're not going to buy power to become more surplus than we already are, but a single rate pool would accomplish the purposes of the Act, far greater than the current language, in that it would spread risks and cost over everybody and would simplify things in the process. As it stands now, any resource that is proposed is immediately taken off to the individual lairs and examined by each customer class to see what its impact is on that customer class. I think it's a destructive situation.

Let me say one thing further about the cost of conservation and the way the Act treated conservation. I've been a little bit puzzled by these Johnny Come Latelies to conservation demanding all sorts of performance from the investor-owned utilities. It's like my grandfather who "discovered" America in 1898. There were already a few people here. Since 1973 the private utilities have clearly understood what marginal cost means. We're the ones who were facing the enormous marginal cost of new resources on our own. The publics weren't.

The pioneering work in conservation in this region was done independently by the private utilities. The Pacific Power & Light no-interest loan scheme, for example, was a national model. We were into conservation before anybody in the public agency arena or even Bonneville had any real experience with it. There are a few exceptions; I think Seattle City Light was pretty active as well.

The reason the publics weren't there is that the public power cost is Bonneville's average cost; they don't see marginal cost. They had no reason to consider it economically, because they weren't seeing the true marginal costs in the region. We were. We know what it was like. It wasn't because of any great patriotism or disproportionate amount of virtue on our side, but we were seeing what it cost to add a kilowatt to the system.

The Act, as I see it, was an attempt to force the public agencies to get into the conservation game, a game we've been playing for a number of years and continue to play. We believe in conservation. We said, and we'll say it again, we will meet or exceed any conservation program that is established in the region, and we'll either do it with a contract from Bonneville, or we'll do it independently, but it will be done. The impression seems to be that if we don't sign conservation contracts with Bonneville, we're not doing conservation. That's just flat wrong.

Q. What do you think the Council's priorities should be now?

That's tough. One thing I think is obvious, I don't want to see the Council drawing lines in the sand and putting batteries on their shoulders or chips or whatever as part of a game of king of the hill. I would like to see the Council develop an orderly procedure for planning—I guess you'd call it capability building—but a procedure that is a continuum in which things are updated, looked at routinely in a manner that flows rather than as a series of monuments. System planning is not something you can do every two years and start over again. I would

like to see a mindset and a procedure developed by which plans are routinely updated and changes are incorporated in an evolutionary rather than a revolutionary process.

It may not have the pizzaz of building a new edifice every two years, but I think the Council should take advantage of the fact that there is no major resource commitment called for now to improve techniques, to do the model building and, more or less, to maintain the ability to revisit issues on a fairly continuous basis. There just isn't that much to plan right now, but I think the options should be maintained, and that's one of them. We should maintain the ability to provide direction when it's needed; it may never be, but on the other hand it might.

The Act was an attempt to force the public agencies to get into the conservation game, a game we've been playing for a number of years and continue to play.

Q. What are your thoughts on the Council's fish and wildlife work?

My experience in the last several years has been that the fish and wildlife side of the Council has tended to take an advocacy position rather than a judgment position. I say this without, in any way, trying to shirk our responsibilities in the fish and wildlife area. We see people using this process to build bureaucratic empires and making this at least as important as helping fish and gaining the support of the Council.

The Act provides for enhancement and mitigation—or whatever those magic words are—of fish and wildlife, but it also provided a source of funding for some rather impoverished agencies. I'm nervous about yet another set of people with imperial tendencies, which we all have, using the Act to further their own goals, beyond protection of fish and wildlife. It appears to me that the Council and staff occasionally give in to this desire, when they should be much more skeptical.

One thing I'd like to make clear is that the Act assigns us a responsibility. I think we've played an honorable role in responding to that requirement. We accepted the water budget—which is a hugely expensive proposition for our ratepayers—very gracefully and in a very constructive way. We've accepted requirements to spill and to pay bucks for facilities as gracefully as we could, within our own responsibility to provide a low-cost power supply. I don't think we should be characterized as being so self serving as to be blindly against every measure being discussed. The thing that concerns me about the Council and staff is the different standards the two sides of the house operate under, even the different standard the Council seems to apply to its approaches to the two areas.

Q. Can you give some examples?

How far does one go, and what is the result in terms of fish? It isn't that you haven't provided justification against a well-defined power loss; you haven't even told us it's justified in terms of fish, let alone power. That's the sort of thing we're concerned about. We know it's going to cost us money, but there seems to be a much looser standard on the fish side.

I want the Council to work. I think my efforts have been constructive—to hold the Council's feet to the fire when I thought the Council went astray, to help the Council where I could and whenever help was invited.

I think the Council, in its success, doesn't have to agree with the conclusions in the industry; it merely has to pay attention to those things we consider important. This is the situation with combustion turbines, and I think the situation is similar with respect to fish. It is not that the Council is making decisions that will cost the power system money; it's that the Council seems to be, in many cases, making decisions based on other than what we consider an objective standard or analysis. It's not that the industry requires the Council to submit to our position in its decisions, but that the process and the attitude be the right form.

One of the things that's bothered me over the years is that there hasn't been good regional planning. I really look at the Council's providing good planning in the region as something that didn't exist before. If that's a reflection on Bonneville, so be it. If there's a need for any planning, then the Council is a very important instrument.

I want the Council to succeed. I want the Council to be good. And I want the staff lean and mean and confident. I think the region would lose a lot if the Council were to lose its place as the primary planner for the region. My disputes with the Council have been conducted in this vein. Just being helpful!

ASSIGNABLE LOSSES:
Hydropower's Responsibility

by Carlotta Collette

There is no question that the Columbia River Basin fishery was once one of the most productive in the world. There is no question, either, that, in only a century, the numbers of salmon and steelhead caught in the basin dropped precipitously. Fish cannery operations disappeared, tribal fisheries were reduced to barely enough to supply the salmon for Indian ceremonies and angling seasons were cut to next to nothing.

There are plenty of reasons for the losses. The incredible commercial harvest alone severely cut into the runs. But theorists and biologists argue that the fish could have recovered their earlier numbers had the great dams not been built on the river. Without the dams, they contend, harvest could have been regulated, habitat restored and hatcheries could have brought the big fish back in familiar quantities. But some of the dams were permanent obstacles to the runs. And it is the presence of the dams that brought the U.S. Congress to the point of legislating for the repair of the fisheries.

In the spring of 1985, the Northwest Power Planning Council embarked on a study to develop a framework for this ambitious project. In the fall, the Council released its assessment of salmon and steelhead losses. Now, those losses have been considered from the perspective of hydropower's contribution and, thus, the scope of Northwest ratepayers' responsibility for the restoration.

The Council staff's losses statement indicated that, since development in the basin began, the number of salmon and steelhead declined by between 7 and 14 million fish. This decline, the statement added, was partly attributable to a loss of nearly one-third of the salmon and steelhead habitat due to blockage by the big dams.

Of this total loss from all causes, the Council staff estimated in an issue paper released in April, between 5 and 11 million salmon and steelhead were lost because of the development and operation of hydroelectric facilities in the Columbia River Basin. The staff suggested this number as a cap for the ratepayer-funded restoration of the fish runs. They noted, however, that damage to the existing ecosystem may limit the restoration to a level far less than that.

The 5 to 11 million range is not more precise, because a reliable single figure would be virtually impossible to calculate. The information from which such calculations could be derived is spotty, with gaps in historical records and questions over the certainty of some of the information that is available. Besides, data-based calculations can rarely handle the complexities of the biological, cultural, hydrological, power and institutional systems that must be considered in the Columbia Basin.

Most of the comment received on this topic agreed that the losses due to hydropower fit within the Council's estimated range.

Shorts

A new fish ladder on the West Fork of Hood River has won national recognition for design excellence. The ladder is made up of a series of steps that span the 70-foot wide river. It will aid steelhead in their assent of a waterfall that had recently appeared as the river ate through bedrock to a softer underlayer. The ladder was designed by a Beaverton, Oregon engineering firm, Rittenhouse-Zieman Associates, and by the Oregon Department of Fish and Wildlife. It was funded by the Bonneville Power Administration as part of habitat improvements called for in the Northwest Power Planning Council's fish and wildlife program.

Conservation alone can cut Northern California's electricity use almost in half without any reduction in comfort levels, states a Pacific Gas and Electric Company study of potential residential electric power savings. The analysis, conducted by the American Council for an Energy-Efficient Economy, concludes that 44 percent of the electrical power consumption in the Northern California service area can be saved by the year 2005, with a "high penetration of both currently available and advanced technologies." The biggest energy savers will be new refrigerators and freezers, according to the study. Copies of the study, Residential Conservation Power Plant Study: Phase I—Technical Potential, are available for $25 from: American Council for an Energy-Efficient Economy, 1001 Connecticut Avenue, Suite 535, Washington, D.C. 20036.

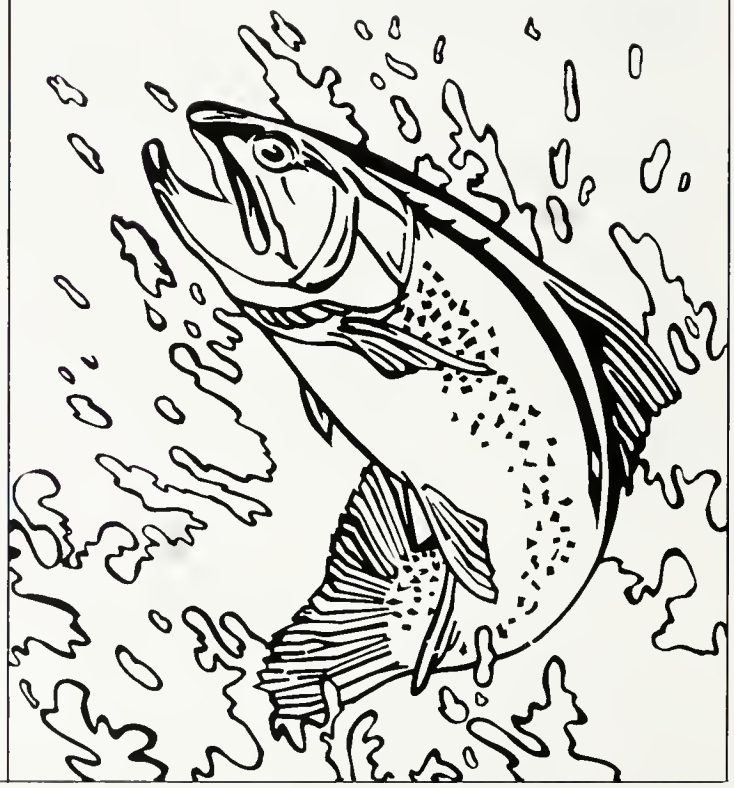


Illustration: Marty Todd

In The News

Enloe Dam on the Similkameen River in Northern Washington

FERC rescinds Enloe Dam license

Long-controversial Enloe Dam on the Similkameen River in Eastern Washington may remain shut down as a result of a recent ruling by the Federal Energy Regulatory Commission (FERC). The ruling rescinds the license obtained by the Public Utility District of Okanogan County to reopen the dam when fish and wildlife protection is accounted for.

The PUD had applied for and received the license on March 3, 1983. That order was appealed by the Colville Confederated Tribes, the Yakima Indian Nation, the National Marine Fisheries Service, the National Wildlife Federation and Washington State Sportsmen's Council, as well as the Northwest Power Planning Council.

These appeals follow a pattern of fisheries community opposition to the dam, set soon after it was first licensed in the 1920s. The dam is an impassible barrier for fish attempting to migrate beyond it into the upper Simalkameen River Basin. (Below the dam, a natural waterfall creates a partial obstruction for the fish.) This basin is a potential source of miles of viable habitat for ocean migrating (anadromous) salmon and steelhead in the Columbia River Basin.

The dam has been out of operation since 1959, when obsolete equipment and disagreements over fish passage facilities led the PUD to close it. Subsequent applications for a new license were dismissed in 1974. In 1976, Congress, as part of the Reclamation of Authorizations Act of that year, called for fish passage at the facility before it could be relicensed.

In 1977, the Bureau of Reclamation determined that removal of the dam would be the best method for improving fish passage on the river. The Bureau later revised its recommendation to include laddering the dam or providing trapping and transport facilities as alternatives to the dam's destruction.

When FERC issued Okanogan County PUD a new license for the dam in 1983, the organizations mentioned above argued that FERC had failed to require the PUD to implement specific anadromous fishery protection and enhancement measures.

In its recent decision, FERC stated, "It is clear to us that the anadromous fishery issues must be resolved before a decision can be made on whether or not it would be in the public interest to issue a license for a project at the Enloe Dam site." Consequently, the license was rescinded until a clear direction for fish protection at the site has been identified. *—CC*

"Energy Edge" widened

The four-state competition to make new Northwest commercial buildings highly energy efficient has been expanded to include "virtually any commercial building in the planning stage," according to Nancy Benner, project manager for the Portland Energy Conservation, Inc. (PECI). Eligible building types include large office, retail/office combinations, institutional buildings, health clinics, hotels, motels, large and small retail operations, grocery stores, restaurants, warehouses and others. Broadening the eligible categories was a result of the high level of interest from owners and designers.

The competition offers all applicants a free energy analysis of their building and technical assistance to help improve the energy efficiency of every building in the competition.

Winners receive incentive payments and recognition for their award-winning designs. The third round of applications closes on July 15. For further information, contact Nancy Benner at (503) 248-4636, or the "Energy Edge" coordinator in your area. *—CC*

Photograph by Carlotta Collette

In The News

New Kokanee hatchery opening in Idaho

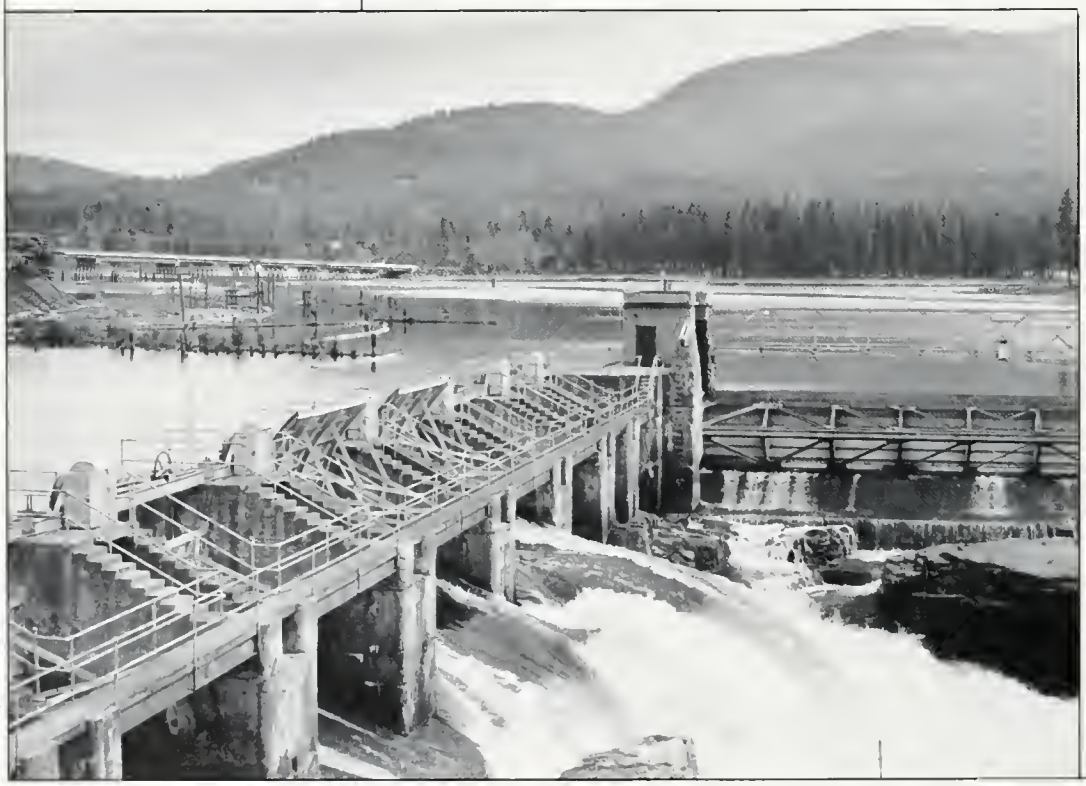
Idaho's Governor John Evans and Northwest Power Planning Council Chairman Bob Saxvik will head a list of dignitaries celebrating the grand opening of Idaho's Cabinet Gorge Kokanee Hatchery on the Clark Fork River. The event will take place on Saturday, July 12 at 11 a.m. at the hatchery eight miles outside of Clark Fork, Idaho. The ceremony and tour of the new facility are open to the public.

The kokanee hatchery is a joint venture of the Bonneville Power Administration, the Washington Water Power Company, and the Idaho Department of Fish and Game. It is the first hatchery constructed under the Northwest Power Planning Council's Fish and Wildlife Program. The Council approved the hatchery in early 1983 to help reverse declining kokanee populations in Lake Pend Oreille. Contractors completed construction last November, nearly one year ahead of schedule.

Bonneville Power Administrator Peter Johnson will also address the public during the brief ceremony. Other speakers will be Idaho Department of Fish and Game Director Jerry Conley and Washington Power Chief Operating Officer Jim Harvey.

Following the 11 a.m. ceremony, the public will be free to tour the hatchery and view an array of displays featuring hatchery operations, the life history of the kokanee salmon, and the collection of artifacts from early Indian and later Chinese railroad employee encampments that were uncovered on the hatchery site. Washington Water Power will also debut a video the company recently produced about the hatchery and the cooperative efforts that made the facility possible.

Cabinet Gorge Kokanee Hatchery and dam near Clark Fork, Idaho



Photographs: Beth Heinrich

The Cabinet Gorge Hatchery will bolster declining populations of kokanee salmon in Lake Pend Oreille by producing and releasing about 20 million advanced kokanee fry each year. Kokanee, introduced into the lake over 45 years ago, are a land-locked form of sockeye salmon. Local sportsmen once harvested nearly 1 million kokanee per year, but that number declined to 200,000 by 1980. With the new hatchery, fisheries managers hope to increase the annual catch to 750,000 adult kokanee.

—Beth Heinrich

Calendar

June 21-22—"15th Annual Columbia River Short Course," an overview of the complex issues facing the Columbia River and Columbia River Gorge, presented by Washington State University and Oregon State University through the Sea Grant Marine Advisory Program. For more information: Mike Spranger, (206) 543-6600, or Suzie Higert, (206) 696-6018, Washington Sea Grant Program, 1919 NE 78th Street, Vancouver, Washington 98665.

June 22-25—Annual Meeting of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) at the Jantzen Beach Red Lion Hotel in Portland, Oregon. For information: Meetings Department, ASHRAE, 1791 Tullie Circle NE, Atlanta, Georgia 30329, (404) 636-8400.

July 9-10—Northwest Power Planning Council meeting in Spokane, Washington.

July 16—"Seminar on Instream Flow Methodologies" at the Four Seasons Olympic Hotel in Seattle, Washington. Sponsored by the Electric Power Research Institute. For information: Sharon Luongo Conference Coordinator, Electric Power Research Institute, P.O. Box 10412, Palo Alto, California 94303, (415) 855-2010.

July 20-23—"1986 Western Association of Fish and Wildlife Agencies and Western Division of The American Fisheries Society Joint Conference" in Portland, Oregon. For more information: Gail Samura, Oregon Department of Fish and Wildlife, P.O. Box 59, Portland, Oregon 97207.

July 21-August 22—"Fisheries Data Management Using Microcomputers," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University, in Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

August 6-7—Northwest Power Planning Council meeting in Kalispell, Montana.

August 25 - September 18—"Fisheries Economics," a training program offered by the Consortium for International Fisheries and Aquaculture Development and Oregon State University, in Corvallis, Oregon. For more information: CIFAD Training Programs, 443 Snell Hall, Oregon State University, Corvallis, Oregon 97331, (503) 754-2624.

September 10-11—Northwest Power Planning Council meeting in Portland, Oregon.

Compiled by Ruth Curtis

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: not all publications are available immediately, but will be sent to you as soon as they are.)

Issue Papers

- ☐ Staff Issue Paper on the Impact of Oil and Gas Price Changes on the Power Plan (See page 11.)
- ☐ Western Energy Study Draft Workplan
- ☐ Staff Issue Paper on Salmon and Steelhead Research (See page 17.)
- ☐ Staff Issue Paper on Salmon and Steelhead Planning (See page 17. Formerly called the Production Planning Issue Paper.)
- ☐ Technical Discussion Paper: Genetic Considerations for Salmon and Steelhead Planning, Draft of Final Report (See page 17.)
- ☐ Technical Discussion Paper on Salmon and Steelhead Planning Model (See page 17.)

Other Publications

- ☐ Draft Northwest Power Planning Council Sixth Annual Report
- ☐ 1986 Power Plan
- ☐ Summary of 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program (See page 7.)
- ☐ 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program (A five-volume set.)

Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: do not check if you already are receiving them.)

- ☐ *Northwest Energy News* (this bimonthly magazine)
- ☐ *Update!* (public involvement newsletter mailed with the Council meeting agenda)

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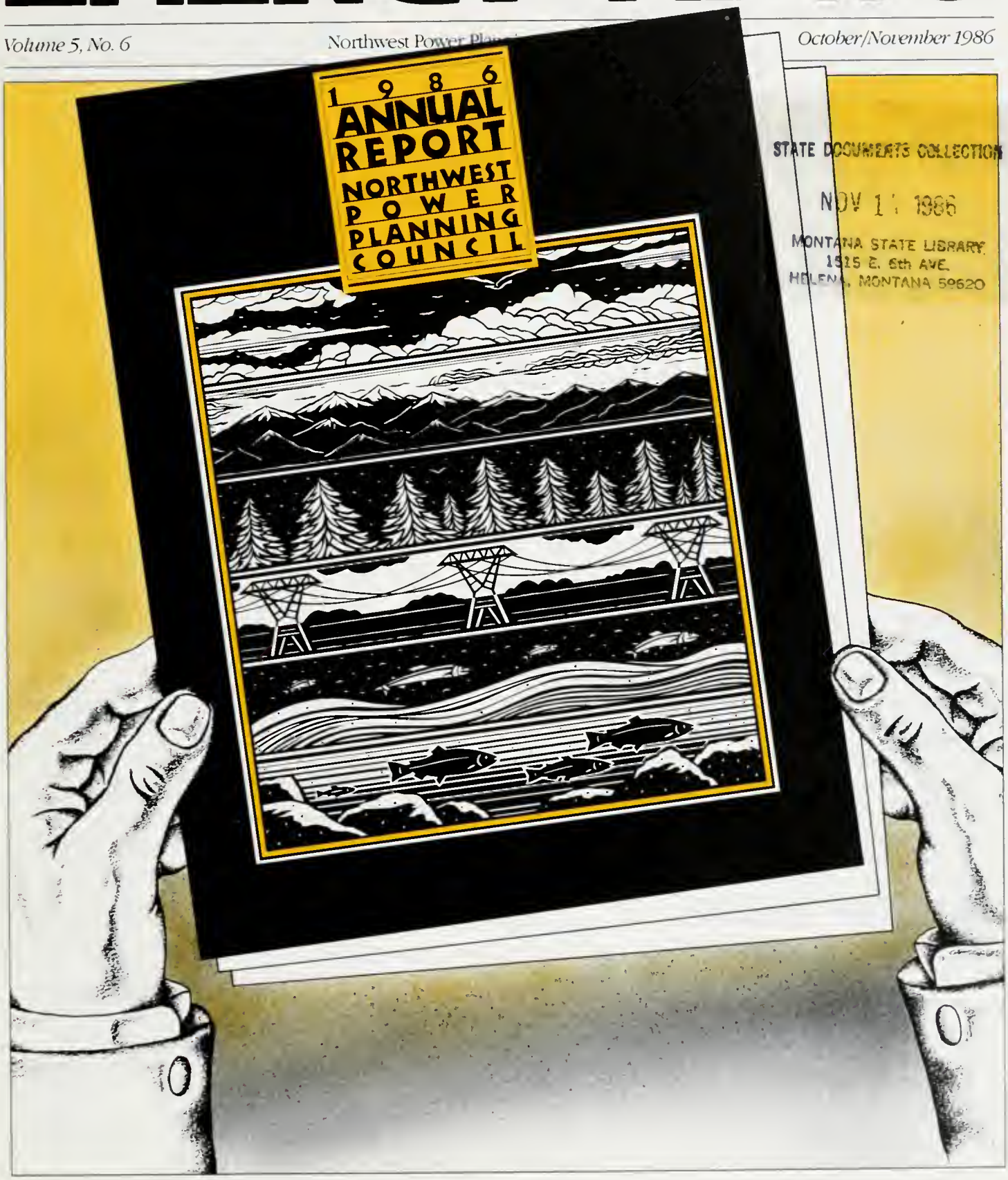
Volume 5, No. 6 Northwest Power Plan October/November 1986



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N O R T H W E S T
ENERGY NEWS

is published bi-monthly by Northwest Power Planning Council, 850 S.W. Broadway, Suite 1100, Portland, Oregon 97205. Reprinting is encouraged. Please credit *Northwest Energy News*.

The Northwest Power Planning Council is required to develop a program to restore the Columbia fisheries and a regional electric energy plan, to be carried out by the Bonneville Power Administration, emphasizing cost-effective conservation and renewable resources.

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Editor's Notes

In September, the Council published its Draft Amendment Document containing recommendations for changes to the Columbia River Basin Fish and Wildlife Program. Soon after that, we sent out the *1986 Annual Report,* which had gone out in a draft form earlier in the summer. In this issue we've summarized both documents, with highlights from the Annual Report and an overview to place the Council's actions in the context of the rest of the region.

In the midst of producing the above-mentioned publications, Paula Walker came on board to assume the positions of special projects editor (e.g., annual reports, power plans and fish and wildlife programs) and assistant editor of *Energy News.* (I double as her assistant editor, too.) Paula comes from Montana, where she was press secretary and speech writer for Governor Ted Schwinden. She is a welcome addition to our staff.

Let me also reintroduce the other contributors to this issue. Jim Nybo serves as public liaison for the Council. He has been particularly involved in promoting regionwide understanding and acceptance of the Council's model conservation standards for new electrically heated buildings.

Ruth Curtis coordinates information resources at the Council. In *Energy News,* she has kept readers informed about the Council's fish and wildlife studies through her regular column. Ruth also edits the Council's monthly publication, *Update!*.

Dulcy Mahar is the public information and involvement division director as well as previous editor of this magazine. Her interviews with individuals in the electric power and fish and wildlife arenas provide views from outside the Council.

And art director Stephen Sasser, with the assistance of free-lance production artist Marty Todd, gives us our "snappy graphix" (or so says the sign on his office door).

COVER ILLUSTRATION: This month's cover is a reproduction of our annual report. The illustration is by Portland printmaker Dennis Cunningham. The hands were drawn by Lynn Carson.

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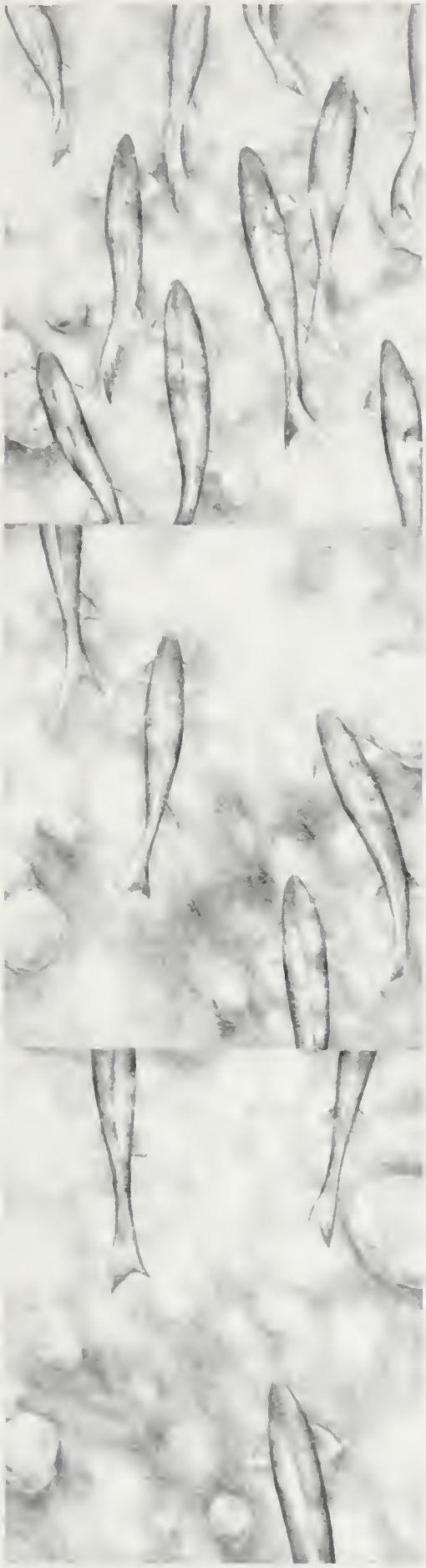


Illustration by Joan Barbour

U.S. VERSUS OREGON

BUILDING A BETTER HARVEST

by Carlotta Collette

There's an ironic symmetry in the fact that a white-educated Nez Perce Indian known as "Lawyer" was privy to the so-called "Stevens' Treaties" of 1855. These were the four treaties through which most of the Columbia River Basin Indian tribes ceded the land that has become the Northwest states, while retaining their rights to fish, hunt and gather nuts and berries "at all usual and accustomed places." It is ironic because these treaties, some of which were signed after only two weeks of discussions, have evolved into some of the longest-running, most complex legal battles in the history of the Northwest.

Now more than 130 years later, other lawyers, along with fisheries biologists and resource managers, are still attempting to settle questions first raised at that early treaty council. The current litigation has its own history, which goes back nearly 20 years.

The case, United States versus Oregon (U.S. v. Oregon), involves the Columbia River fisheries, in which the tribes that were parties to the 1855 treaties (the Yakima Indian Nation, the Confederated Tribes of the Warm Springs, the Confederated Tribes of the Umatilla and the Nez Perce Tribe) have asserted their "right of taking fish at all usual and customary places in common with citizens of the territory." After years of piggybacked lawsuits, U.S. v. Oregon may be producing an ambitious new agreement among the parties to the case.

U.S. v. Oregon includes a series of federal court decisions, beginning in 1969, that consistently affirmed the tribes' right to take a fair share (approximately half) of fish passing tribal fishing areas. Those rulings were considered landmarks in Indian natural resources law and are very important to the tribes involved. Because the rulings involved major natural resource reallocations, they have, particularly in the last decade, heightened tensions between Indian and non-Indian fishers.

Unfortunately, the fish runs in the Columbia River Basin no longer resemble the runs the Indians fished at the time the treaties were signed. A "fair share" of next to nothing is still next to nothing. As the litany of court cases proceeded, it became clear to the litigants on both sides that it would be better to work together to rebuild the fish runs, than to fight each other for shares of a shrinking resource.

The tribes and the states of Oregon and Washington took a step in that direction in 1977. With encouragement from the federal court, they negotiated a five-year agreement to allocate harvest of salmon, steelhead and other ocean-migrating fish in the Columbia River Basin. While the agreement worked in some respects, it also had failings, particularly in its failure to provide means for increasing the size of fish runs in the upper basin.

When it came time to renew the agreement in 1982, the parties changed tack. Instead of renewing the old agreement, they began a lengthy process not only to allocate harvest rates for the various stocks of fish, but also to develop production plans for increasing the number of fish available for harvesting, particularly in the higher reaches of the basin. The goal of this painstaking planning effort is to make fish production complement harvest agreements.

The negotiations are made even more complex by the relatively recent interventions of the State of Idaho and the Shoshone-Bannock Indian tribe of Idaho. Because that state is located in the upper Columbia River Basin, its fish harvest occurs only after the fish have run the full gauntlet of lower river fisheries. Neither the state nor the tribe has had direct control over the lower river fish harvest and, consequently, Idaho's fishers can only take leftovers at the end of a long line of other harvesters.

The negotiations focus on three major areas of fisheries' improvements. The first of these, the spring and summer chinook stocks, have been greatly depleted. Negotiators hope that harvest constraints, hatchery production and habitat repair, together with current fish protection measures on the river, will improve their runs.

With the fall chinook and coho runs, the negotiators are betting that harvest constraints and a fair split between inriver and ocean harvests will rebuild the stocks without having to resort to new hatcheries.

The plan for improving the steelhead runs includes three hatcheries that are in construction or planning on the lower Snake River and in the Umatilla and Yakima river basins.

"The immediate goal," explained Jim Martin, from the Oregon Department of Fish and Wildlife, "is to beef up the runs, harvest fairly what we have and rebuild the spring and summer runs. In a year or so, we'll be able to look at long-range plans," he added.

All parties in this process have enormous incentives to reach agreement, in part, because the courts have repeatedly ordered negotiations for a new plan for the Columbia River fisheries. The negotiations are also likely to play an important role in the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program, since program measures must complement the activities of the fish and wildlife agencies and Indian tribes.

Tim Wapato, executive director of the Columbia River Inter-Tribal Fish Commission said of the U.S. v. Oregon proceeding, "More than 15 years of litigation didn't increase the fish runs one iota. It did, however, clearly establish the tribal right to a fair share of the fishery and the right to have that fishery forever. With the U.S. v. Oregon framework, we'll be able to implement that right in a cooperative manner that improves the fish runs for all residents of the Columbia Basin."

A HOUSEHOLD LABORATORY: NEW STUDY EXAMINES THERMAL PERFORMANCE OF HOMES

Photograph by Jim Nybo

Montana Council member Morris Brusett visits with contractor Paul Nolan on the site of the University of Washington study.

A new study in Washington state has turned homes into laboratories in order to examine the effect of various household components on energy efficiency. The study, which is being conducted by the University of Washington, was a provision of legislation passed in 1985 to upgrade the state's building code.

Proposed by builder representatives, the study was included in the 1985 legislation in order to gain builder support for the code upgrade bill.

Funded by a surcharge on local building permits, the study necessitated the construction of four houses with identical floor plans based on the original prototype house developed by the Northwest Power Planning Council in conjunction with its model conservation standards.

In early September, Council members Tom Trulove (Washington) and Morris Brusett (Montana) visited the buildings, which were then under construction. The two Council members spoke at length with the building contractors and representatives of the Seattle Master Builders Association, long-time advocates of this research.

Each house has three bedrooms, two baths, a laundry closet, kitchen, living room and dining room. The floor area of each house is 1,350 square feet. Although they are all single-story with concrete foundations and crawl spaces, the houses are not identical with respect to energy features. Two are built to the 1980 Washington energy code, and two are built to the Council's model conservation standards.

While it is true there have been many studies on the energy efficiency of buildings in the Northwest, the University of Washington study is unique in its focus on the performance of individual components of a building's thermal "envelope." That is, the area that separates the heated interior space from the colder outside environment. Ceilings, walls, floors, doors and windows are all parts of the envelope.

"This study will examine in tremendous detail the energy performance of building components when embedded in a complex system of a living, breathing house," says Richard Watson, director of the Washington State Energy Office, which is administering the study.

Data from the study will include information on computer programs that simulate energy use in homes and on the specific ways heat is transferred through various wall constructions. The project will also monitor and record thermostat settings; power use for space heating, water heating and clothes drying in addition to total power use; the time and degree that doors and windows are open; and relative humidity.

Investigation of how occupant behavior affects the thermal performance of the homes is an important part of the study. Two of the homes (one code home and one model conservation standard home) will be occupied by university graduate student families. The other two will be unoccupied. Actual energy consumption data from studies of large numbers of occupied homes have varied widely. Those discrepancies have often been attributed to differences in occupant behavior. The study of the occupied and unoccupied homes might shed some light on the effects occupants have on energy efficiency.

Because the study targets actual performance of various residential building components, it does not directly deal with the question of the cost effectiveness of implementing codes that adhere to the model conservation standards. The study's findings may lead to revision of the estimates of energy savings or the costs of conservation measures, but they will not directly address the cost-effectiveness question, which entails many factors not included in the University of Washington study. Such factors include the costs of power resources in the region, retail power rates and mortgage interest tax deductions.

Data from the study will be turned over to the Washington State Energy Office, which will make recommendations on the 1986 state energy code to the Washington Legislature in 1988.

YEAR-END REPORT

HIGHLIGHTS REGIONAL COOPERATION

On December 5, 1980, President Jimmy Carter signed into law the Pacific Northwest Electric Power Planning and Conservation Act (the Northwest Power Act or just the Act), which set into motion a regionwide transformation in policies and priorities that has no precedent in the United States.

The Act created the opportunity for Idaho, Montana, Oregon and Washington to plan together the most efficient, environmentally sound and cost-effective means to provide for their states' future electric power needs. The Act also promoted a Columbia River Basin fish and wildlife restoration effort that will likely be one of the most ambitious natural resource restorations on the planet.

Last December the Northwest celebrated or survived—depending on the viewpoint—the fifth anniversary of the Act. To mark that event, *Energy News* interviewed a number of people who had been involved in the Act's development to see what they thought it had accomplished. While there were numerous caveats, the prevailing mood was that the Act had been a positive force in the region.

The region has something new to be proud of. In less than six years, electric ratepayers in the Pacific Northwest have turned what had been the most electricity-consuming corner of the country into one famous for its successful conservation efforts. Hood River County, in Oregon, could well be renamed "Conservation County," because nearly every electrically heated home there has been weatherized.

In Snohomish County, Washington, over 30,000 homes have been insulated as the result of a program operated by the Public Utility District (PUD). The PUD has also sponsored the construction of a new super-conserving subdivision of houses and the development of weather-tight housing on the Tulalip Indian Reservation.

Hundreds of thousands of dollars in lighting, heating and cooling bills will be saved on commercial buildings that are being built in all four Northwest states.

Irrigating farmers are working with their local utilities to save millions of dollars in electrical costs and huge quantities of limited groundwater and river water.

There are cooperative conservation programs going on in all sectors—residential, commercial, industrial and agricultural.

The emphasis on conservation is not the only new aspect of the region's electrical power scene. The whole concept of forecasting future energy demands has been changed, and the process of building resources to meet that anticipated demand has changed with it.

In the past, energy planners attempted to prejudge the average rate at which electrical loads would grow over 10 or even 20 years. Resource developments were then keyed to a single percent-of-growth rate. If the figure were large, big plans were made and equally big investments followed. Resource planners bet bundles because they had to be prepared to meet the future need—if it materialized.

Illustration by Dennis Cunningham

In the Northwest, after steady growth from the 1940s to the 1970s, planners raised their projections higher still, and saw, instead, a quick decline in electrical use. Utilities are now coping with surplus electricity, a surplus made all the more expensive by the costly new generating resources built to meet that anticipated need.

Such pin-point forecasts are history when compared to the Council's power planning. The innovative "range" forecast used by the Council takes into account the unpredictability of the future. Rather than pick a single target to build to, the range forecast brackets likely load growth. Growth could be low, high or somewhere between the two extremes.

Resource developers no longer have to commit to multi-million dollar projects that may never be needed. Instead, the Council proposed a process called "optioning," in which the relatively inexpensive business of design, siting and licensing generating facilities can go on, but the construction is postponed until the facility is clearly needed.

Similar innovations and success stories can be told of the fish and wildlife side of the Act's mandate. In the years before the Act was signed, huge hydropower dams had threatened the future of Columbia River salmon and steelhead. While the dams continue to pose a threat to the runs, Northwesterners can take satisfaction in knowing that the region has moved several important steps closer to balancing its valuable hydroelectric system's power potential with the equally valuable fish and wildlife that share the Columbia River Basin.

The transformation began while the Act was still being written. To develop the fish and wildlife sections of the Act, fish and wildlife agencies, Indian tribes, hydropower project operators, utilities and other interested parties formed an ad hoc committee and negotiated the language that became Section 4(h) of the Act.

Section 4(h) called for a "systemwide" approach to actions aimed at restoring the fish and wildlife populations affected by hydropower development and operation. This in itself was a first for the Northwest, where corrective measures were often taken on a dam-by-dam and stream reach-by-stream reach basis. The Act also recognized the basin's Indian tribes status as co-managers of the fisheries resource along with the fisheries agencies.

Since the Act's signing, negotiation has replaced litigation more often, and even the big mainstem Columbia River dams are undergoing reconstruction to make them more conducive to the migrations of salmon and steelhead. Until that work is complete, water laden with juvenile fish is being spilled over the dams to reduce fish mortalities resulting from the alternate passage—through the turbines.

Many areas of particular progress stand out in the basin. These are covered more fully in the summary of the Council's Sixth Annual Report on the next few pages.

Each state can take some pride in the work going on in its locale, yet each state's individual success story is ultimately eclipsed by the growing cooperation among all four states. Some of the same forces that created the Northwest Power Act and the Council have also led the way toward building a regional consensus. But that consensus is still more a goal than an achievement. The old controversies run deep. Data can sometimes conflict and confuse. The power system and the ecosystem are both far too complex to be easily finetuned.

The work has begun. There is some success; there are some failures. Much remains to be done. What follows is a summary of the Council's Sixth Annual Report to Congress. The Act requires that the Council report annually on its fish and wildlife activities. The Council has chosen to report on its power planning, public involvement, legal and administrative activities as well—an indication of how tightly the Council's activities are interwoven. Copies of the full annual report are available from the Council's central office.

A 1986 SUMMARY

by Paula M. Walker

Although it may be a bit early for the strains of "Auld Lang Syne" for most people, agencies and organizations that abide by the congressional calendar bid farewell to 1986 on September 30 and greeted the New Year on October 1. For the Northwest Power Planning Council, the beginning of Fiscal Year 1987 provided an opportunity to look backward a moment before moving ahead, a time to re-assess the events of Fiscal Year 1986 and to set priorities for 1987 and beyond.

Since October 1, 1985, the world has watched as the Philippines and Haiti installed new governments; oil prices dropped to 1974 levels; and the Challenger and Chernobyl disasters made society take a second look at two technological achievements it had begun to take for granted. Meanwhile in the Northwest, state governments confronted budget cuts, and Expo '86 brought tourists into the region on their way to Vancouver, British Columbia.

During this time, the Northwest Power Planning Council continued its efforts to balance the conscientious development of electrical energy resources with the careful restoration of fish and wildlife.

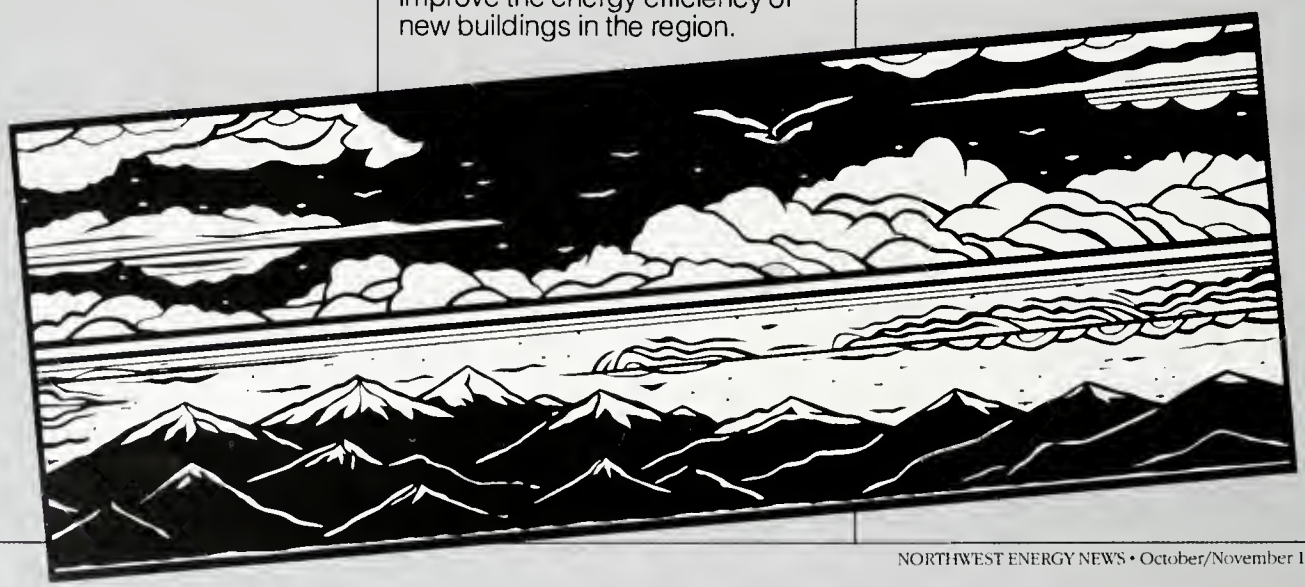
In its *1986 Annual Report* to Congress, the Council detailed progress in the region regarding its power planning and fish and wildlife activities. A review of that report shows that the Council succeeded in keeping most of its 1986 "resolutions."

During Fiscal Year 1986, the Council continued to work with the Bonneville Power Administration, utilities, federal, state and local governments, interest groups, Indian tribes and others concerned about Northwest energy and fish and wildlife issues. In keeping with the spirit of the Northwest Power Act, fish and wildlife are not an afterthought but an equal partner in the Council's dual goals of developing an economical, reliable power supply for the region and protecting its fish and wildlife resources. Council activities in 1986 emphasized both areas.

Foremost among the events of the past year was the decision by the United States Court of Appeals for the Ninth Circuit upholding the constitutionality of the Council. A suit initiated in July 1983 by the Seattle Master Builders Association and others challenged the validity of the Council's model conservation standards, which were developed in accordance with the Northwest Power Act to improve the energy efficiency of new buildings in the region.

The petitioners argued that the standards were not cost-effective and that the Council used improper methods to determine their cost effectiveness. A secondary aspect of the suit challenged the Council's constitutionality on the grounds that the selection of its members by state governors breached the Appointments Clause of the U.S. Constitution, which requires officers of the United States to be appointed by the executive branch of the federal government. That "secondary" issue soon became the primary focus as various agencies and groups lined up on both sides, filing briefs supporting either the Council or the homebuilders.

On April 10, 1986, the Ninth Circuit Court ruled in the Council's favor on both its constitutionality and the validity of its model conservation standards. Calling the Council "an innovative system of cooperative federalism," the Court agreed with the Council's contention that it is an interstate compact agency operating under the Compact Clause of the U.S. Constitution. The Court said precedent existed for federal agencies to follow policies set by non-federal agencies.



In upholding the validity of the Council's model conservation standards, the Court also affirmed the Northwest Power Plan itself. It noted that the Act gives the Council considerable flexibility in preparing the plan and said choosing the methodology for determining the model conservation standards was within the scope of the Council's responsibilities.

When the Court's favorable decision was issued, 1986 was already half over for the Council. By that time, the Council had, among other things, approved a new power plan; amended the model conservation standards; received recommendations for changes in the fish and wildlife program; and voted to amend that program to extend the spill period (the time during which water is released from dams operated by the U.S. Army Corps of Engineers to help juvenile fish in their downstream migration).

The adoption of the 1986 Power Plan represented not only one of the Council's major accomplishments last year but also reflected the ever-changing nature of power planning. Although the Northwest Power Act requires the Council to update its plan within five years, the Council decided to begin revising it only two years after adopting the initial plan in 1983 because of the major uncertainties hovering over the region's electrical energy picture.

Like dark clouds warning of an impending electrical storm, these uncertainties cast shadows over past assumptions the Council had used to make predictions about the region's energy future in the 1983 plan. Since then, questions have arisen about the future of the two unfinished Washington Public Power Supply System nuclear projects; the future of the region's aluminum industry, which buys nearly one-third of the Bonneville Power Administration's power; the extent of acceptance of model conservation standards throughout the region; and the extent of surplus power sales and purchases outside the region.

The Bonneville Power Administration and the Eugene Water and Electric Board issued the first tax-exempt bonds ever sold to fund conservation efforts. The $17 million sale will go to weatherize residences in the utility's service area in west-central Oregon.

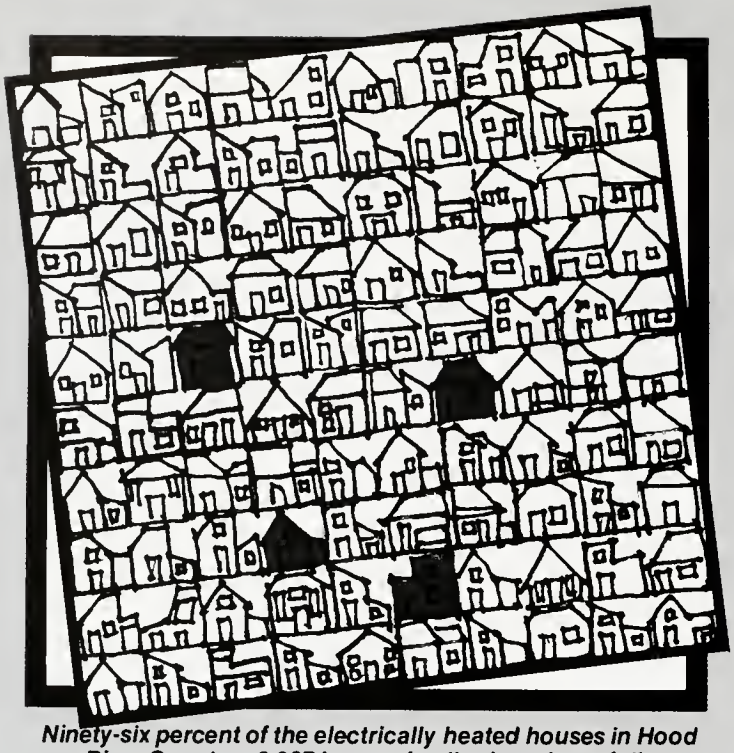
Illustrations by Fredrika Spillman

The 1986 Power Plan revised both the regional forecast and the resource portfolio. Because of new information, the Council changed the region's projected growth rate. The current figures project the region to grow from a low of 0.2 percent to a high of 2.7 percent, compared to the 1983 forecast range of 0.7 percent to 2.5 percent. If the projected low-end growth occurs, the Council predicts the current surplus would continue for 20 years and conservation could fulfill the region's electrical energy needs. At the high-end growth rate, the region would consume the surplus by 1990, when it would need new resources.

The Council's resource portfolio, which has been compared to an investor's portfolio, lists the types and amounts of resources that would be available to meet growth in the demand for electricity. Adhering to the directive of the Northwest Power Act, the resources are listed in descending order of cost effectiveness. The least costly resources would be brought on line first. While the 1986 Power Plan generally identifies the same types of resources that appeared in the 1983 plan, a few changes stand out.

Conservation, which has been identified as the least costly resource, is anticipated to provide about 1,000 megawatts less than was projected in the 1983 plan. That decrease corresponds to the reduced electrical demand forecast in the new plan. Lower growth means fewer new buildings would be constructed; thus, it would be harder to exact energy savings, and conservation would be less available.

A second major change in the resource portfolio is the recommended use of small hydropower facilities. The 1986 figure of 200 megawatts is down from the 920 average megawatts estimated in the 1983 plan, because the Council has included only new hydropower available through improvements and upgrades at existing sites. No new sites will be included in the portfolio until the Council has completed its hydropower assessment study to determine areas that should be protected from future hydropower development.



Ninety-six percent of the electrically heated houses in Hood River County—2,987 houses in all—have been fully weatherized as the result of a cooperative effort among the Council, the Bonneville Power Administration, Pacific Power and Light Company, the Hood River Electric Cooperative, the Natural Resources Defense Council, the Pacific Northwest Utilities Conference Committee and the Northwest Public Power Association.

The Council's Action Plan recommends acquiring cost-effective resources, which if not developed now, will be lost to the region forever. The best example is the model conservation standards. If the standards aren't implemented now to make new buildings more energy efficient, those buildings will consume electricity inefficiently long after the current surplus has been used up.

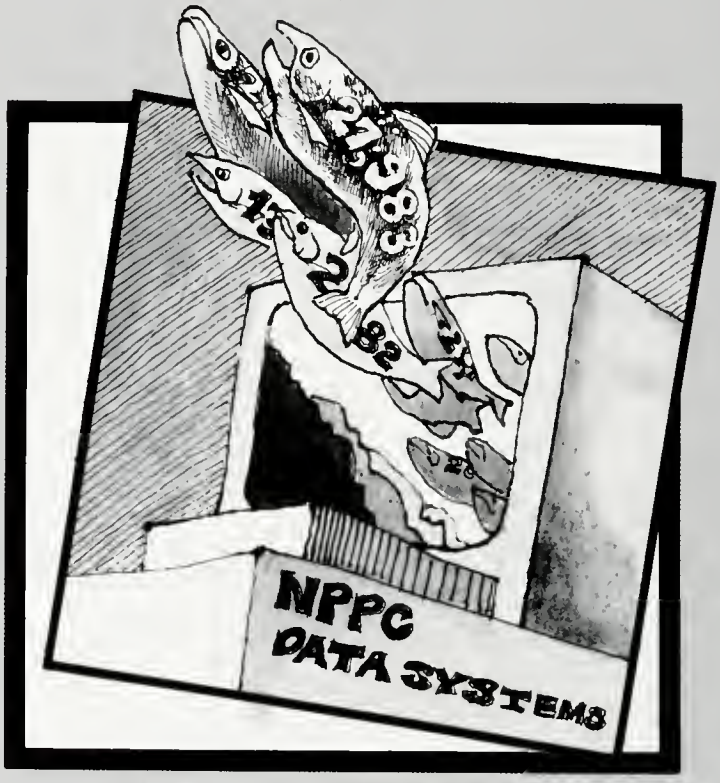
Other Action Plan priorities include developing mechanisms to transfer conservation savings from utilities that have a surplus to those that need new resources; demonstrating the cost effectiveness of renewable resources; preserving the two Washington Public Power Supply System plants as potential future power resources; and initiating a Western Energy Study to examine the possible benefits of power sales between regions.

In December 1985, the Council amended the model conservation standards to give utilities and builders greater flexibility in how to implement them. The standards themselves, however, have not changed.

A third major change emphasizes strategies to use the existing hydropower system more effectively. The 1986 plan calls for the region to explore ways to firm up its "nonfirm" power, that portion of the hydro system's output that is available only in average or good water years. The Council estimates that 700 megawatts of this secondary power could be firmed up to meet the region's needs.

In yet another departure from the 1983 plan, the 1986 plan includes recommended actions for the region's public utility commissions and investor-owned utilities. Those recommendations underscore the major theme of the new plan—regional cooperation.

In its Action Plan, the 1986 Power Plan established a new set of resolutions for the region to keep in order to achieve the Council's long-term goals. The current Action Plan sets near-term steps to be taken, but it gives the Bonneville Power Administration, which has the primary responsibility for implementing the plan, greater flexibility in how it meets the Council's objectives.



The peripatetic life cycle of Columbia River salmon and steelhead has been simulated by a computer model of the Columbia River Basin. The model can be used to collect and organize data about the fish. The data can then be used to test various restoration measures such as facilitating fish passage, improving fish habitat or controlling the harvest of salmon and steelhead.

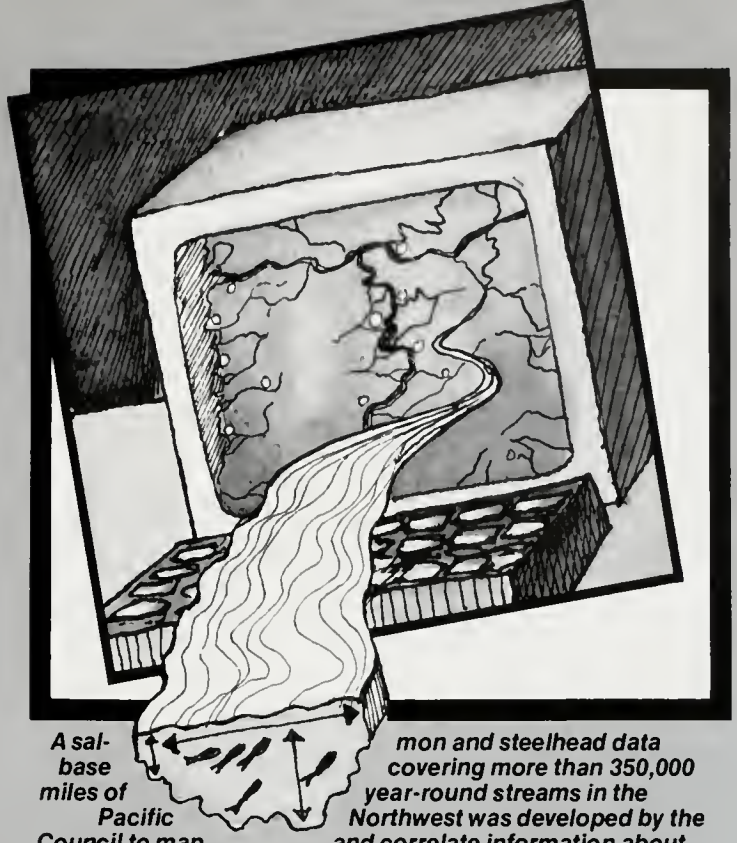
The amendments delayed the previous 10 percent surcharge that would have been assessed against utilities if the standards were not adopted in their service areas by January 1986. The Council also has worked with Bonneville to create an incentive program, called the BPA/Utility MCS Program, that will encourage builders to construct new electrically heated homes to the standards by offering both marketing and financial assistance.

Utilities must choose to participate in the program or submit their own alternative incentive program for approval by Bonneville. The programs are to go into effect for 1987 and must produce at least 30 percent of the savings possible through model conservation standards that year.

The early adopters program continued in 1986. Since the model conservation standards were amended last December, four more Washington municipalities have adopted codes meeting the standards, bringing the total number of early adopters to ten.

Just as the power picture has changed in the past year, so have fish and wildlife concerns. Having revised the power plan to more accurately reflect worldwide and regional changes, the Council also took the opportunity to begin refining its Columbia River Basin Fish and Wildlife Program. A wealth of information has been revealed by the Council's study on salmon and steelhead losses in the basin as well as other major efforts in the complex process of building a framework and systemwide policies for the program.

After compiling 120 years of information on activities that affected salmon and steelhead populations in the basin, Council staff then estimated how many of the fish were lost because of hydropower development and operations. The estimate ranges between 5 and 11 million adult salmon and steelhead annually. Currently, the basin produces about 2.5 million of those fish each year.



A salmon and steelhead data base covering more than 350,000 miles of year-round streams in the Pacific Northwest was developed by the Council to map and correlate information about salmon and steelhead habitat and other river uses. The data base maps stream reaches from one river confluence to the next. It can describe stream reach length, width, presence or absence of fish, habitat available at low river flows and potential for fish production on that reach. The system can also cross-reference to data about the cultural, recreational, archeological and other institutional values identified at each stream reach.

Developing a framework for the salmon and steelhead portion of the program also has involved planning workshops for fish and wildlife agencies, tribal representatives and power interests, where a valuable computer model of the life cycle of the salmon was developed. The model will help fish and wildlife interests look at salmon and steelhead management policies from a basinwide perspective. Other activities in the framework-building process in 1986 included steps to coordinate production planning activities in the basin and proposals for solidifying salmon and steelhead research priorities.

After asking for amendments for the program in the summer of 1985, the Council received more than 85 recommendations for changes from 25 individuals or organizations by February 18, 1986.

As a result of a series of discussions on specific amendment issues, the Council produced a draft amendment document for the program, which includes Council and staff-generated amendments as well as those received from other entities.

Major features of the document, which was distributed for public comment in September, include a statement of the responsibility of the hydropower system for salmon and steelhead losses in the basin; a description of the Council's systemwide approach to restoring those fish in the Columbia River Basin; support of completion of habitat and tributary projects by 1989; and a policy for substituting resident fish (those that do not migrate to the ocean) in those areas where hydropower facilities have blocked ocean-migrating fish from their upstream spawning habitat.

Changes in water budget accounting (the body of water released from the dams to help juvenile fish travel downstream) and transportation policy (the practice of moving juvenile salmon and steelhead around the mainstem Columbia dams by truck or barge) are also included in the draft amendment document. These and many other recommendations are currently being examined by interested parties throughout the region who have until December 15 to comment on the draft.

Initiating the amendment process for the fish and wildlife program is just one of many actions the Council has taken in the past year to maintain the balance between fish and wildlife needs and hydroelectric operations.

The first fish hatchery to be completed under the Council's program officially opened last July in Idaho. As a resident fish hatchery for kokanee salmon, it is designed to help reverse declining populations of the fish in Lake Pend Oreille.

The Yakima Basin yielded one of the happiest tales of 1986—yes, a fish tale. Once a home for over half a million adult salmon and steelhead, the Yakima Basin had produced as few as 2,000 as recently as 1979. The 1986 salmon and steelhead runs were recorded at 12,000 returning adult fish. Fish passage improvements share credit for this success along with better water management practices and the water budget on the Columbia.

Bonneville funding and congressional appropriations in Fiscal Year 1986 provided more than $15 million, which has been spent on 20 separate fish passage improvement projects in the Yakima Basin. All told, the estimated cost of all improvements in the Yakima Basin is $46 million. The basin will also be the site of a major salmon and steelhead hatchery facility recommended by the Council. The current successes in the Yakima Basin represent years of planning that have paid off in tangible results.

The 120-year history of sport and commercial salmon and steelhead catches, cannery output and archaeological and anthropological studies regarding the uses of salmon and steelhead in the Columbia River Basin were among the information compiled by the Council and distributed to the public as the Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin. It is the most comprehensive record of the status and history of Columbia River salmon and steelhead runs ever written.

During 1986, the Council also made some headway in correcting mainstem passage problems experienced by juvenile fish at the dams as they migrate toward the ocean. While many elements are involved in improving their chances for survival as these fish travel both upstream and downstream, the water budget and fish passage improvements at the dams are two of the most important.

The water budget is a block of water set aside for use during the April 15 to June 15 spring smolt migration. It creates an artificial spring freshet by releasing water that would otherwise be held in the reservoirs. This special release replaces the natural runoff that used to carry young salmon and steelhead from their spawning grounds to the ocean in the years before dams were built on the Columbia River. In those days, the trip took less than a month. The water budget increases flows below Priest Rapids Dam on the Columbia and Lower Granite Dam on the Snake River. In 1986, good flow conditions, partly as a result of high natural runoff conditions, helped the young fish reach their destination.

Salmon and steelhead received an added boost last year through a variety of fish passage improvements at dams on the mainstem of the Columbia and Snake rivers. Bypass systems, including fish ladders and submersible traveling screens, were put in place at several dams on the mainstem. The U.S. Army Corps of Engineers has juvenile fish bypass facilities in place at Bonneville, John Day, McNary, Little Goose and Lower Granite dams. Ice Harbor and The Dalles dams have sluiceways that are operated as juvenile bypasses. And feasibility studies are under way at other dams.

Channels to help juvenile salmon and steelhead past mainstem Columbia and Snake river dams, and screens to prevent them from being forced through the dam's turbines are being improved at or added to mainstem dams. Until these passage improvements are in place, water is being spilled at each dam to increase the survival of juvenile migrants.

The Council took another step to assist juvenile fish by extending the "spill period" for Corps-operated dams on the mainstem of the Columbia and Snake rivers. Its action extended to August 15 the time during which water is released at the dams to help the fish on their downstream migration. The Council's decision sustained the minimum 90 percent juvenile fish survival rate at seven mainstem Corps dams, but the extended spill period now covers 80 percent of the spring and summer downstream migrations.

With all its activities to help the basin's fish populations, the Council did not overlook its commitment to the wildlife side of the fish and wildlife program. Mitigation status reviews of hydroelectric impacts on wildlife were completed in Oregon, Washington and Montana. Loss studies have been completed on the Montana projects and on the Willamette River projects in Oregon as well as several projects in Idaho.

The Montana Department of Fish, Wildlife & Parks has submitted proposals to mitigate harm caused to wildlife because of the development and operation of the Hungry Horse and Libby dams. The proposals, which are being considered in the fish and wildlife program amendment process, would provide habitat protection and improvement for elk, mule deer, grizzly and black bear, waterfowl, bald eagles, white-tailed deer, bighorn sheep, Columbian sharp-tailed grouse and small mammals.

Although 1986 had its share of good news regarding power and fish and wildlife activities in the Northwest, greeting the New Year on October 1 involved more than confetti-throwing and horn-blowing. Because the Columbia River Basin has been home for both one of the world's largest salmon and steelhead populations and one of the world's most valuable hydropower resources, the two uses sometimes clash. When two such worlds collide, it often requires solutions of major proportions. As a new year dawns, the Northwest Power Planning Council will continue working to develop those solutions in the months ahead.

More than 400 houses throughout all four Northwest states have been built to the model conservation standards through the Residential Standards Demonstration Program. The program also provided training for home builders, building code officials and others in the shelter industry.

In The News

Efficient appliances nationwide are goal of Evans' bill

National energy conservation standards for most major home appliances will replace individual state standards, if legislation introduced by Senator Dan Evans of Washington is passed by Congress.

The new bill will unify what Evans, a former Northwest Power Planning Council chairman, referred to as "a patchwork of differing state requirements." The standards would be phased in over five years, at which time they would be subject to a U.S. Department of Energy review for possible revision.

"The National Appliance Bill calls for interim standards that are generally less stringent than those called for in the Northwest Power Planning Council's 1986 Power Plan," explained Ed Sheets, executive director of the Council. "But the bill would improve the efficiency of appliances not covered by the power plan, and it includes an opportunity to strengthen the standards later," he added.

The proposed legislation was the result of a compromise between appliance manufacturers and energy conservation advocates. Appliance manufacturers prefer the bill's attempts at national standardization to the costly task of having to build appliances to different codes in each state.

The conservationists, led by the Natural Resources Defense Council, calculated the benefits they expect will accrue over 20 years with the standards in place. They include nationwide savings of up to 30,000 average megawatts of electricity and natural gas savings equal to a tenth of the total U.S. oil imports. —*CC*

Fisheries agencies and Indian tribes form new team

Columbia River Basin Indian tribes and federal and state fish and wildlife agencies have agreed to work together as the Columbia Basin Fish and Wildlife Authority. The new organization, formed in late September, replaces the Columbia Basin Fish and Wildlife Council.

The decision came as the result of a unanimous vote by the Washington Department of Fisheries, the Washington Department of Game, the Oregon Department of Fish and Wildlife, the Idaho Department of Fish and Wildlife, the Columbia River Basin Inter-Tribal Fish Commission (CRITFC), the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. Each of these organizations is considered a voting member of the group, which intends to make the majority of its decisions by consensus.

The Montana Department of Fish, Wildlife & Parks has an option of becoming a full voting member or choosing a lesser role (along with the eight basin Indian tribes that are not members of CRITFC).

The new organization will be different from its predecessor, the Columbia Basin Fish and Wildlife Council, according to Rollie Schmitten, who chairs the new authority. "The group's membership is different, with the tribes as full participating and voting members along with the other active managers on the river," explained Schmitten.

"The group is not an 'authority' as such," said Tim Wapato, executive director of the Columbia River Inter-Tribal Fish Commission. "It is a common ground for fishery managers to meet and plan for the restoration of the Columbia River Basin's fish runs," he added.

"All fish and wildlife policy questions will now go through this body," Schmitten pointed out. The group's members hope to reach a consensus on management decisions before taking their concerns to the Northwest Power Planning Council and the Bonneville Power Administration, said Schmitten.

—*CC*

Cheney becomes tenth "early adopter"

Cheney, Washington has become the most recent city to adopt building codes meeting the model conservation standards. The City Council held two public hearings before casting a unanimous vote for adoption in August.

To allow time to prepare for implementation of the new codes, the Cheney City Council set January 1, 1987, as the effective enforcement date.

Cheney joins the Washington cities of Fircrest, Milton and Cathlamet as early adopters of codes meeting the model conservation standards since they were reviewed and reaffirmed by the Northwest Power Planning Council last December. The early adopter program, sponsored by the Bonneville Power Administration, provides financial assistance to state and local governments for implementation and enforcement of codes that meet the levels set by the model conservation standards.

The other early adopters, all from Washington, are the City of Tacoma, Grays Harbor County, and the municipalities of Stanwood, Elma, McCleary and Republic.

Cheney is the home of Washington Council member Tom Trulove, who served as the city's mayor until joining the Council.

—*JN*

Illustration by Stephen Sasser

In The News

Tie-line expansion moving ahead at Bonneville Power

The Bonneville Power Administration will proceed with expansion of the transmission system connecting Bonneville's electrical facilities in the Northwest with those of the Los Angeles Department of Water and Power, agency officials announced in September.

This upgrade will increase the capacity of the system from 2,000 megawatts to 3,100 megawatts. The decision to proceed was made after environmental assessments conducted by Bonneville indicated that no significant environmental impacts would result from the project.

Several organizations and individuals had expressed concerns about the apparent lack of need for the project; potential impacts on fish and wildlife in the region; and the methods used by Bonneville to identify those impacts. The Northwest Power Planning Council also had commented on the Bonneville proposal—primarily on fish and wildlife issues.

Bonneville concluded that no significant impacts would occur either from the construction or from changes in regional power system operations resulting from the increased capacity.

In announcing the agency's decision, Bonneville Administrator Jim Jura said the additional capacity produced by the expansion will benefit the Northwest by providing another outlet to market surplus power, which will yield additional revenues.

Construction is expected to begin in spring of 1987 with completion scheduled for February 1989. The project is anticipated to cost an estimated $95 million.

—PMW

Bonneville holds public review of nuclear plants

The Bonneville Power Administration has been asking a lot of questions about the partially completed Washington Public Power Supply System Nuclear Projects 1 and 3 (WNP-1 and 3) to try to come to grips with what fate the plants should face. Should the plants be completed, kept in mothballs or scrapped, Bonneville officials wonder.

The questions are among the most complex and difficult ones the Northwest is facing. They relate to concerns about the region's future electrical energy needs. What rates will electricity consumers be paying for the resource? What alternative resources can replace the plants? How else could the plants be used if they are terminated?

Bonneville is the financial backer of the two unfinished plants whose construction was halted in 1982 and 1983. WNP-1, at Hanford, Washington, is 63 percent complete. WNP-3, at Satsop, Washington, is 76 percent complete. A total of $5 billion has been invested in the two projects, according to Bonneville.

The Northwest Power Planning Council, in its 1986 Power Plan for the region, estimated that the plants have an average expected value to the region of $630 million—if they can be preserved at minimal costs and if they can then be completed with resolution of the financial and legal problems that have plagued them.

The Council stopped short of listing the plants in the power plan's portfolio of resources but considered them potential options that could be cost-effective to complete when and if they are needed.

Bonneville hopes to make recommendations to the Supply System's board of directors by March 1987.

—CC

Salmon River Basin hydro permits overturned

At the urging of the Northwest Power Planning Council and others, preliminary permits issued by the Federal Energy Regulatory Commission (FERC) for seven hydroelectric dams in Idaho's Salmon River Basin were overturned on September 30.

The decision, by the U.S. Court of Appeals for the Ninth Circuit, concluded that FERC had issued the permits without first conducting comprehensive studies and plans to control the effects of developing and operating many projects in one basin. (While only seven preliminary permits were granted, almost 50 permit applications were pending when FERC acted.) The Court also determined that FERC had not established sound reasons for failing to conduct the comprehensive studies.

The National Wildlife Federation, the Idaho Wildlife Federation and the Nez Perce Indian tribe filed the suit against FERC on May 11, 1984. The petitioners were concerned that hydroelectric development in the Salmon River Basin could endanger spring chinook salmon and steelhead runs in that basin.

The Council had filed a brief in support of the wildlife federations and the tribe, arguing that FERC was obliged to take into account "to the fullest extent practicable" the Council's fish and wildlife program, which FERC admitted it had not done.

The Ninth Circuit ruled that "the Commission failed to consider the Council's [Columbia River Basin Fish and Wildlife] Program at all—a clear violation of the Northwest Power Act's express requirement that the Council's program be 'taken into account at each relevant stage.' "

The Court also ruled that FERC gave no evidence to explain why it had decided "not to develop a comprehensive plan, not to require permittees to study cumulative impacts, not to impose uniform study guidelines on permittees, and not to collect environmental baseline data." The Court agreed with the petitioners, who argued that FERC had not satisfied requirements of the Federal Power Act and the Northwest Power Act.

"Congress' commitment to coordinated study and comprehensive planning along an entire river system before hydroelectric projects are authorized is a central feature of the Federal Power Act," the Court concluded.

—CC

Dulcy Mahar
Interview with

ROLLIE SCHMITTEN

His Seattle office is down on the brushy shores of Lake Washington, where, because they can't see him through his mirrored glass wall, geese walk up and peer in. That is just fine with Rollie Schmitten, because he had always wanted to be a wildlife biologist.

It didn't quite work out that way, but Schmitten ended up in fish and wildlife anyway—as a manager. He is currently Northwest regional director of the National Marine Fisheries Service (NMFS), a part of the National Oceanic and Atmospheric Administration under the U.S. Department of Commerce. The regional NMFS office is involved in regulation, research and management of the Northwest's coastal fisheries, with some inland jurisdiction extending to research on salmon and steelhead migrations. Schmitten is directly responsible for NMFS activities in nine western states.

He is also chairman of the new Columbia Basin Fish and Wildlife Authority (formerly the Columbia Basin Fish and Wildlife Council), an organization of the basin's federal, state and tribal fish and wildlife agencies, which meets to discuss joint problems and strategies.

Schmitten's dream of becoming a wildlife biologist was set aside in college when he realized "there were very few jobs available at that time, and those who secured jobs weren't making very much money." So he switched to a forestry major and didn't have the time to take a look at fish and wildlife again until he ran successfully for the Washington state legislature in 1976.

As a state representative, he made natural resources his priority, chairing the natural resources committee in the Washington House from 1979 to 1981. He added environmental affairs to the committee's charges, because he "felt the whole natural resources package included the environment as well as timber, fish and game."

In 1981, Governor John Spellman offered him the directorship of the Washington Department of Fisheries, where he served for two years before joining the governor's personal staff as chief of policy for natural resources. He later was named chief of staff. In January 1985, he joined the National Marine Fisheries Service as regional director.

Q. How does the National Marine Fisheries Service fit into regional fish management?

Many of the actions and the problems surrounding production and management in the Columbia River Basin are really between the states and tribes. But that's not to say that the National Marine Fisheries Service or other federal entities don't have some Columbia River management responsibility. All of us agree we don't operate in a vacuum.

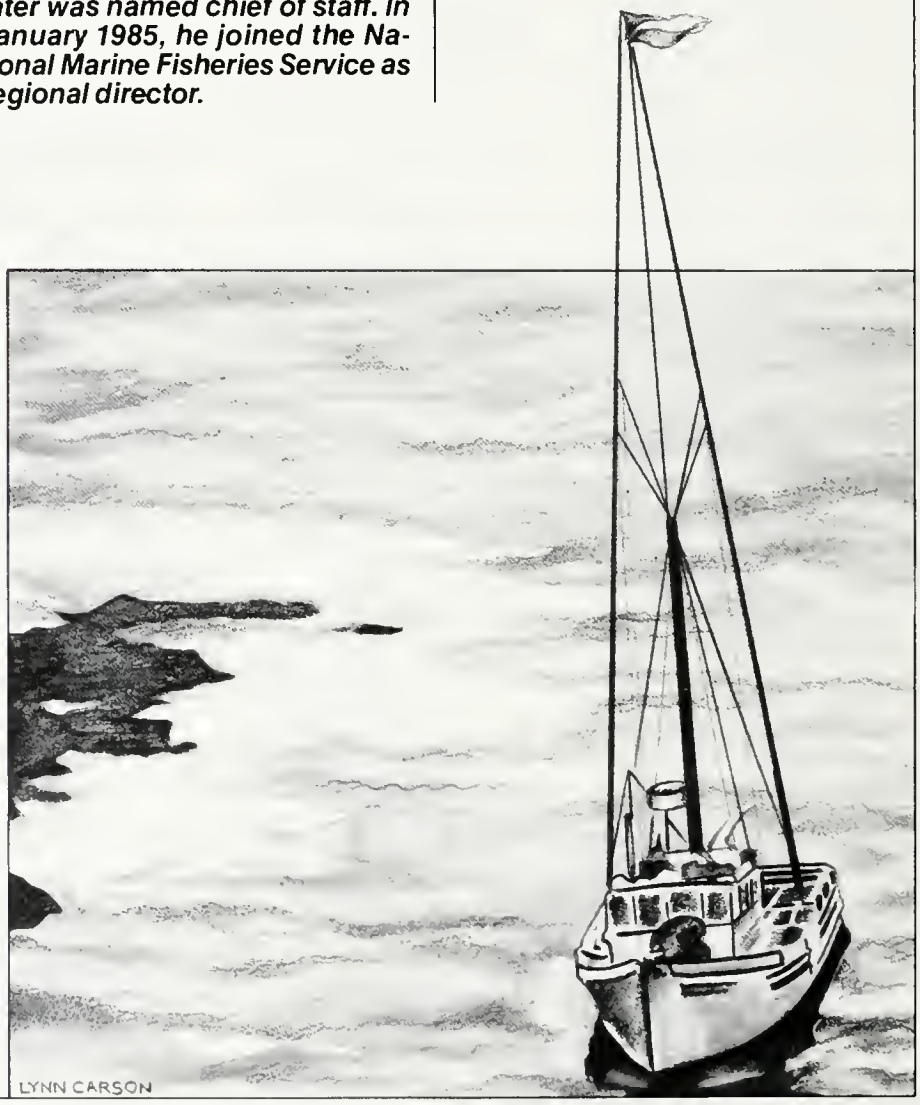


Illustration by Lynn Carson

The states and the tribes have a stake in what occurs in the ocean outside three [miles], where it becomes federal management. If I err by allowing overharvest, it certainly is going to have an impact on the tribes and vice versa if they fail to produce or if they overharvest inside the basin. So we've got to work together.

NMFS has some direct management responsibilites as far as habitat and the proper conduct of hatcheries under the Mitchell Act.[1] Specifically, we help with production planning and pass funds through to the states of Oregon and Washington for hatchery operations. Finally, we're involved in research and development in the Columbia River. But, overall, it's important to understand that no entity stands alone; that each one's management activities have impacts on others. We work in a partnership.

Q. In what ways have the Northwest Power Act and the Northwest Power Planning Council's fish and wildlife program affected salmon and steelhead enhancement in the basin?

First, let me say what I view the Act as doing. I think it's brought about equality for all competing users. It certainly has not placed one user ahead of the other. It has really provided for a basinwide look at power, water and fish and wildlife needs. It has given fish and wildlife managers a forum in which we can express our desires as equals.

I wouldn't want to look at the Act strictly in dollars and cents, but no doubt about it, it has provided the necessary funding to get moving with the restoration of fish and wildlife. The success stories, I'm happy to suggest, are some of the tributary passage improvements. I can see improvements in the Wenatchee, the Yakima and the Umatilla river basins.

[1] The Mitchell Act of 1938 and amendments to it provided funding to offset fish losses in the Columbia River Basin due to federal water project developments and other impacts. The program has helped build 22 hatcheries and three salmon rearing ponds.

Q. What areas do you feel the Power Council needs to focus on more?

I would say the Council has been the least responsive in enhancing the fisheries. We're not as successful in restoring the upper Columbia and Snake river runs. And I think there's been little progress in resolving juvenile fish mortality issues. New hatchery propagation and research and development that could improve the current hatchery processes are also still lacking. I believe that this is because of the Council's strict commitment to the cost-benefit process, and I personally don't disagree that the projects have to be viable.

But I disagree with the length of time it's taking us to determine whether to go or not go with the suggested projects. Concerning enhancement, I think that from a fisheries manager's standpoint, there has been neither as fast an improvement or as dramatic an improvement as many of us anticipated.

And we were hoping for more habitat protection. In that area, we have concerns about low-head hydropower potential, especially in the Snake River system and in some of the tributaries of the Columbia. I'm not certain we're getting the habitat protections that we hoped for.

In general, I think there is too much study, too much planning and too little action. It's imperative that the fish and wildlife directors be reasonable, that we don't anticipate getting all the requests we put forward. I think we have to be accountable for what we ask for. On the other hand, if we can meet the criteria in the Act and the program, we should be able to go ahead with our projects. I feel that we have not been granted the ability to move forward as fast as we'd like.

Q. There has been talk among some power interests suggesting that the Act created funding for some "impoverished" agencies, which are now using it to further their own goals and build empires beyond fish and wildlife protection. Could you respond?

Certainly, these people are entitled to their own opinions, and I have not had the opportunity to discuss this with them face to face, as I'd like to, but let me just state that *they're wrong*. I think the Act recognizes all interest groups and brings each into an equal position. It certainly doesn't put "impoverished" fish and wildlife agencies over power interests or water interests or allow empire-building.

My view is that to survive, we have to be reasonable in our requests. We have to reflect on and understand the needs of the other users. Most importantly, we have to work together with them. We certainly are not going to back down from our needs just because there are other needs, but we'll try to consider all of them in developing a balanced package. I certainly want to work in harmony with the power and water interests. That's why the fisheries managers and tribes contacted the [Bonneville Power Administration] Administrator and the Power Council and why we have agreed to discuss policy matters with them on a regular basis.

Q. How receptive have you found Jim Jura [Bonneville's Administrator] to your interests?

I am *very* impressed with the new Administrator. Mr. Jura certainly isn't acquiescing to all of our requests, but what I'm impressed with is that he is listening to us, and he's trying to understand some very complicated issues. I think you'll see some resolution on issues that have been on the table for several years.

Today's process of communicating with the Administrator and Power Council is much superior to past practices of allowing lower level staff managers to wrestle with decisions with little or no guidance.

Q. In your view, what progress has been made in managing fish harvests over the last few years?

I think there has been significant progress. Even 10 years ago, we had each state and each tribe regulating its own fisheries both inside the state and in the ocean. There was little or no coordination. But with the Magnuson Act a coordinated effort was created, at least in ocean management, and things have changed dramatically since then.

The Northwest Power Act, enacted six years ago, and the more recent U.S.-Canada Treaty [regarding Pacific salmon harvests] have helped provide a holistic view toward harvest management. These have all been parts of the puzzle that helped bring about coordinated coastwide management. We still need to stop the destruction of habitat, which we're trying to do, but we need some additional help.

Q. You suggest that coordination is the biggest achievement in the fisheries. Can you talk about the relationship between the fish and wildlife agencies and the basin's Indian tribes?

Currently, the relationships are probably the most positive aspect of fish and wildlife management. And I cannot say that loudly enough or often enough. If you go back to just 1981, when I started in

fisheries management, I remember coming aboard as the state director and facing nearly 80 residual lawsuits. Many other suits were filed that first year. Today, things have changed dramatically. Two or three suits per year are the norm.

I think what changed was everyone's willingness to take a new look; to get away from court confrontations; to get away from allowing the courts to manage our fisheries; and to begin to sit down and learn about each other's needs through a negotiating process. What really helped was to make the needs of fish Number One; to make fish the common denominator that we all work from.

I should add that what goes with this is full recognition that the tribes are co-managers of the fish and wildlife resource. In my opinion, they are doing a good job. In this past year, the tribes released 58 million fish regionwide as part of their ongoing programs. That's significant because those are fish for all citizens. I just can't say enough about how attitudes have changed.

It's not perfect. We still have disagreements. And those disagreements occasionally lead to lawsuits. But what we've developed is a process in which we can talk, in which we can look at our differences and at least try to reach alternatives to having the judicial system manage the fishery resource.

Q. What are your particular goals as chairman of the Columbia Basin Fish and Wildlife Authority?

From a fish and wildlife perspective, my goals are to bring forward a coordinated effort. I find that's where we have the most strength when dealing with our counterparts. We've been met with a lot of willingness from the other parties to do this.

Q. How will the new Basin Authority differ from its predecessor, the Basin Council? What changes are you proposing?

When I came on board nearly a year ago as the chairman of the Council, I made a commitment to the other directors that I was going to be an activist. I was going to get involved in Columbia Basin matters. I was committed to improving our relationships with the Power Council, Bonneville, the Corps [U.S. Army Corps of Engineers] and the Public Utility Districts [PUDs]. I think that for the most part we've done that.

We have had a couple of working sessions with the Power Council. We've scheduled quarterly meetings with the new Bonneville Administrator. We've had several visits with the PUDs, and the message we're carrying is that fish and wildlife directors intend to be united in their positions and that we want to work with them as policy-makers one on one.

The significant change and major improvement of the new Basin Authority is that it brings the Columbia Basin Indian tribes in as full members. At the same time we will modernize our charge to reflect changes in the basin, such as those brought about by U.S. v. Oregon [see story on page 3] and the U.S.-Canada Treaty. We are also looking at restructuring some of the old council's subcommittees. But our major thrust is to take a united front on issues.

Q. There has been some controversy over whether the Council's fish and wildlife program is for so-called "meat or museum" fish. Would you comment on that?

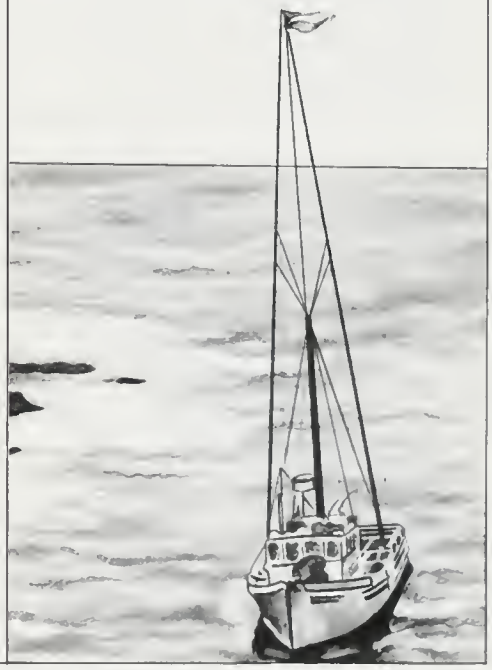
My answer would have to be: a balance of both. Certainly it's my goal, and I think the Council's goal, too, to rebuild the fish runs and restore the habitat for use by recreational, commercial and tribal fishermen. I guess it all boils down to providing a protein resource to the public at a reasonable price. It can't strictly be a showpiece resource, although we should provide opportunities for those who just appreciate the aesthetic value of salmon. It's a careful balancing act of production and of fish-watching.

There is another side of this question: Do you enhance the fish by artificial means at the expense of our wild fish, or do you try and completely dedicate all your energy and resources to preserving the wild stocks? The direction we've chosen as salmon managers is a balance of both, recognizing that if you overplay either side of the equation, it could spell disaster.

There's agreement among fisheries managers that we've got to look at both aspects of the "meat or museum" fish question and that we can't put all our "eggs in one basket."

Q. Is it fairly universally accepted that wild stocks are genetically superior?

That battle has loomed for so long, I don't know who's winning. I think the better answer is that there's a commitment to promote both stocks—not one instead of the other. It is alleged that the wild stocks are more durable. At least the sports and the commercial [fishing] communities have indicated this. I don't know if that can be scientifically substantiated or not. We've also found that wild fish can be more fragile in some ways. Any habitat disturbance affects them far more than the hatchery fish, which are protected in their own controlled environment.



Q. You've had a unique opportunity to see fisheries management from both the state position and the federal position. What are the differences?

I've had the opportunity to observe all the directors in the Washington state government, and I can say without a doubt that the director of fisheries is one of the most, if not *the* most, challenging position in the state. The difficulty is being in the position of having to allocate too few resources among too many user groups. I used to liken that to dividing a candy bar among your children when the first thing they always do is compare the pieces to see who was favored. Well, the same jealousy exists with the user groups. It's very tough to survive in a position like the state director of fisheries over a long period of time. Having to make tough resource decisions does not help long-term job security. I think that Bill Wilkerson [Washington's director of fisheries] has done a tremendous job in that regard, and that's why he's survived changes in administrations.

The difference in the federal position is that you really are a bit removed and buffered from the pressures of direct contact with the user groups. And the issues are much broader. In addition to management of domestic ocean fisheries, I'm involved with foreign fisheries off the West Coast and with development of fisheries products as well as enforcement. I've thoroughly enjoyed both jobs and am absolutely dedicated to our natural resources.

Q. You've been in the news quite a bit with the recent dramatic seizure of illegal fish on the high seas.

This is really a significant event. In early September we announced the seizure of 600,000 pounds of illegally caught chum and sockeye salmon. We have since accounted for another 2.9 million pounds of salmon. This is the largest seizure in the history of the nation and most likely the history of the world.

The whole scam now appears to include around 3.5 million pounds of fish which were laundered by a Taiwanese group through a very elaborate scheme of processing these fish; labeling them as fish other than salmon with a California corporation name and with phony bills of lading, sending them to Hong Kong or Singapore and then into the Port of Tacoma. The bills of lading were changed in the Port of Tacoma, where the fish became a product of the United States and were sent back as such to Japan, the ultimate destination.

We're left with the serious question: "What's going to happen to the fish?" At first I was concerned that the fish might have to be destroyed, but that's not the case. That would have been an extreme injustice and a waste of the resource. On the other hand, we didn't want to put them on the market all at once and depress the market. That would have created an adverse situation for our own processors.

I finally reached an agreement that the fish will be donated to charitable organizations along the West Coast. It will be exciting to see food banks that, in addition to cheese and butter, will also provide salmon. Can you imagine—salmon! Some people may never have eaten it before.

Q. One final question; if you were the Power Council, what would you do differently?

I don't think any major overhaul is needed for the Power Council. I think that, as with many oversight bodies, including our own, there's a need for an introspective look at what you're doing and a need to be open to criticism to see how you might improve. I think we've had that kind of frank discussion with the Council members with some success.

We would like more help getting on with some of the projects, getting them out of the study phase, and getting the process started. I guess it's the business side of me. I'm impatient, and I want to get this system going. Certainly, we'll make mistakes, but I think we can correct the mistakes. The Council has been forthright and easy to deal with. We just need to get going.

Fish and Wildlife Update

by Ruth Curtis

It appears to be a plain document, but it is a bestseller for the Council. "It" is the 1986 Draft Amendment Document, affectionately known as the "DAD," which contains proposals to amend the Columbia River Basin Fish and Wildlife Program.

The Draft Amendment Document contains preliminary recommendations to adopt, modify or reject each of more than 80 amendment applications the Council received from various parties last winter. It also incorporates amendment proposals from the Council and its staff.

The document currently is being distributed for public comment. Use the order form on the back cover of this magazine to request a copy. Public hearings were held in each state in October, and written comment will be accepted through December 15, 1986.

The Council will consider all the comments received and adopt final amendments in February 1987. The Council will also publish a written response to any amendment proposals that are rejected.

Salmon and steelhead planning

In late October, every person and group who received the Draft Amendment Document also was sent an issue paper on systemwide policies for salmon and steelhead planning in the Columbia River Basin. These systemwide policies recognize the need to integrate river passage improvements; salmon and steelhead production; and harvesting to improve the fisheries in the Columbia River Basin. The discussion of alternative planning strategies described in the paper could affect program amendments proposed in the Draft Amendment Document.

Major features of the Draft Amendment Document

- A statement that hydropower development in the Columbia River Basin is responsible for a reduction in salmon and steelhead runs of about 5 to 11 million adult fish. This statement was proposed by the Council last spring.
- A description of the Council's approach to systemwide planning for salmon and steelhead. The approach emphasizes the interdependence of three types of action—river passage improvement, fish production and harvest management.
- A set of guiding principles and areas of emphasis for salmon and steelhead research in the basin.
- Provision for Bonneville Power Administration funding of data collection on hatchery and natural production of fish.
- A policy on resident fish substitutions (proposed by the Council last spring) and the proposed addition to the program of a variety of resident fish substitution projects in areas above Chief Joseph and Hells Canyon dams. Resident fish are fish, such as certain trout or kokanee, which do not migrate to the ocean. They are used as substitutes for fish populations lost when salmon and steelhead passage into parts of the basin was blocked by hydroelectric dams.
- Changes in the water budget accounting and implementing process. The water budget is a block of water set aside to be used in timed releases corresponding to spring salmon and steelhead runs. It actually increases the regulated flow of the river to speed the migrating juvenile fish downstream.
- Changes in the fish transportation policy. Transportation refers to collecting downstream migrating fish and transporting them in barges or trucks around the dams.
- Changes in funding of habitat improvements and projects to clear fish passage on tributaries.
- Support for Bonneville funding of a spring chinook hatchery in northeastern Oregon.
- Provision of Bonneville power for a Umatilla pumping project to increase water flows for fish in the Umatilla River.
- Recognition of the Montana Power Company's agreement to fund the purchase of water from Painted Rocks Reservoir to maintain flows for fish.
- Plans to mitigate the effect of Libby and Hungry Horse dams on wildlife in Montana.

Fish and wildlife activities work plan

In response to the fish and wildlife program Five-Year Action Plan, the Bonneville Power Administration plans to release a draft work plan for fish and wildlife activities in Fiscal Year 1987. The draft work plan reflects the Bonneville Administrator's recent decision to reduce Bonneville's fish and wildlife program budget to about $36.9 million. The Council intends to take comment on the proposed work plan at its November 12-13 meeting in Portland. Background materials and additional information are available from the Council.

(To receive copies of the documents mentioned here, use the order form on the back cover.)

Shorts

Last year, builder Campbell Massey won an award for the most efficient home built in climate Zone 3 (cooler Montana climates) under the Bonneville Power Administration's Super Good Cents Program. This year Massey used the promotional funds he received with the award to build cut-away wall and floor section displays showing the features of a Super Good Cents home. (The Super Good Cents Program markets super energy-efficient new homes.) Massey and Rudy Kratofil of the Ravalli County Public Utility District, in the Bitterroot Valley of western Montana, worked with high school construction classes to build the displays, which are now featured in local retail building supply stores and fairs. Next, Massey plans to build an entire Super Good Cents home in cooperation with a local high school. (Source: Bonneville Power Administration, *Super Good Cents Bulletin,* September 1986)

Norway is about to take an even bigger bite out of the market previously served almost exclusively by Pacific Northwest salmon fishers. By 1990, the bounty of Norway's domestic salmon is expected to top 100,000 metric tons as Norwegian salmon-farming operations quadruple. In the Northwest, Alaska harvests about 290,000 tons, and Washington hauls in about a tenth of that. As other countries expand their salmon-farming ventures, overproduction could cause the collapse of prices in the marketplace. (Source: *Marple's Business Newsletter,* 911 Western Ave., #300, Seattle, WA 98104)

Texas may follow the Northwest with a "least-cost" electrical energy policy, if a coalition of citizens' groups has its way. The coalition, which includes environmentalists, energy conservation advocates, senior citizen groups and other organizations, has petitioned the Texas Public Utilities Commission to adopt new rules that would require utilities to use the least costly method of meeting electrical energy needs. According to Tom Smith, director of Public Citizen of Texas and a coalition member, the move could potentially save Texans 33-66 percent of their annual energy consumption by the year 2000, at less cost than the power plants now under construction. (Source: Energy Conservation Coalition, 1525 New Hampshire Avenue N.W., Washington, D.C., 20036)

A super battery being studied in California might provide one answer to the problem of having to build enough electrical generating resources to meet even occasional peak loads. Southern California Edison Company and the Electric Power Research Institute plan to build the battery, the world's largest; a device that can store enough electricity for 10,000 customers. The battery will be charged at night, when generating equipment is usually idle, and discharged during the day as it is needed to meet peak electrical demands.

The battery will use thousands of lead-acid cells—like those in car batteries—and it will cover an acre of ground. The project is expected to cost $10 million and be completed in 1987. (Source: *The Wall Street Journal*)

An entire community of town houses with solar-generated electricity (photovoltaic) has been completed in San Diego, California—an area with electric rates that are higher than the national average. Each town house features a 1-kilowatt (peak) array of ARCO Solar Inc. photovoltaic modules. (*Solar Energy Intelligence Report,* July 15, 1986.)

The Pacific Northwest still has the lowest electric rates in the nation, according to a recent survey by the National Association of Regulatory Utility Commissioners. The Northwest's rates ranged from 3.62 cents to 4.8 cents per kilowatt hour. This compares with a national average of about 8 cents per kilowatt hour and a high of over 15 cents for an East Coast utility. (Source: Oregon State University Extension Service, *ENERGYgram,* Corvallis OR 97331)

Total energy consumption during 1986 will increase 2 percent to 75.4 Quads (quadrillion Btu), with a further 4 percent increase by mid-1987, according to the U.S. Energy Information Administration. The agency also makes the following projections for the country's energy use during 1986: oil imports will average 4.8 million barrels per day, up from 4.3 million in 1985; demand for petroleum products will increase moderately due to demand for residual fuel by electric utilities; natural gas consumption will decrease slightly to 17 trillion cubic feet; coal consumption will increase less than 1 percent to 827 million tons; and electricity generation will increase 2 percent over 1985 and another 5 percent by mid-1987. (Source: Oregon State University Extension Service, *ENERGYgram,* Corvallis, OR 97331)

COLUMBIA FISH COUNTS CLIMBING

	Average 1976-1986	1986
Bonneville Dam (Columbia River)		
Spring Chinook	84,262	123,177
Summer Chinook	35,494	31,041
Fall Chinook	224,743	227,132
Coho	39,743	93,084
Steelhead	185,274	356,858
Sockeye	79,775	58,094
McNary Dam (Columbia River)		
Spring Chinook	40,380	76,058
Summer Chinook	23,651	25,857
Fall Chinook	78,418	110,566
Coho	6,556	128
Steelhead	88,132	96,761
Sockeye	45,489	46,058
Ice Harbor Dam (Snake River)		
Spring Chinook	22,425	39,089
Summer Chinook	6,177	7,748
Fall Chinook	2,869	1,607
Coho	558	0
Steelhead	60,477	37,180
Sockeye	231	16

(Source U S. Army Corps of Engineers)

Most salmon and steelhead runs in the Columbia River continued to show improvement this year as indicated by the number of adult fish counted at three dams on the river system. While some runs do not top the 10-year average, the only runs that did not improve over the 1985 counts were the sockeye—whose runs typically are cyclical. The steelhead runs for 1986 are likely to be the highest on record. (The figures above are as of September 21, 1986. The count of fall chinook will increase substantially at each dam as the year progresses.)

Calendar

October 28-30—"2nd Annual Northwest Energy Expo" in Seattle, Washington. Sponsored by Puget Sound Power and Light, in cooperation with Seattle City Light, Snohomish County Public Utility District, the City of Tacoma Light Division, and the Bonneville Power Administration. For more information: Puget Sound Power and Light Co., P.O. Box 97034, Bellevue, Washington 98009-9734, (206) 462-3726.

November 4-6—"U.S. Coal: Markets, Contracts, & Procurement Decisionmaking" in Denver, Colorado. The fourth annual conference on coal marketing strategies, sponsored by the Edison Electric Institute, the Western Coal Export Council, and Resource Data International. For more information: Coal Marketing Strategies, 1660 S. Albion, Suite 623, Denver, Colorado 80222, (303) 756-1267 or (303) 295-3227.

November 5—"Package Economizers: A Prime Source of HVAC Recovery," in Portland, Oregon. A Commercial Energy Forum monthly luncheon sponsored by the Oregon State University Extension Service. For more information: Susan Vogt, Oregon State University Extension Service, Multnomah County Office, 211 S.E. 80th Ave., Portland, Oregon 97215, (503) 241-9172.

November 12-13—Northwest Power Planning Council meeting in Portland, Oregon. Meeting will be held at the Council's central office at 850 S.W. Broadway, Suite 1100.

December 1-5—"Riparian/Stream Management," a training program offered by Taecan, and Don Chapman Consultants, Inc., to be held in Boise, Idaho. For more information: Don Chapman Consultants, Inc., 3180 Airport Way, Boise, Idaho 83705, (208) 383-3401.

December 3—"Using Energy Accounting as a Diagnostic Tool in Selected Commercial Buildings," in Portland, Oregon. A Commercial Energy Forum monthly luncheon sponsored by the Oregon State University Extension Service. For more information: Susan Vogt, Oregon State University Extension Service, Multnomah County Office, 211 S.E. 80th Ave., Portland, Oregon 97215, (503) 241-9172.

December 10-11—Northwest Power Planning Council meeting in Seattle, Washington. Meeting will be held at the Federal Building, 915 Second Avenue, Seattle, Washington.

Compiled by Ruth Curtis

COUNCIL PUBLICATIONS ORDER FORM

Please send me a copy of the following publications of the Northwest Power Planning Council. (Note: not all publications are available immediately, but will be sent to you as soon as they are.)

Publications

- ☐ Issue paper on Columbia Basin salmon and steelhead policies (See page 21.)
- ☐ Draft Amendment Document—Columbia River Basin Fish and Wildlife Program (See page 21.)
- ☐ Summary of 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program
- ☐ 1986 Applications for Amendments—Columbia River Basin Fish and Wildlife Program (five-volume set)
- ☐ 1986 Northwest Power Plan
- ☐ 1986 Annual Report of the Northwest Power Planning Council
- ☐ Background Information on Bonneville Power Administration Fish and Wildlife Program Work Plans

Mailing Lists

Please add my name to the mailing lists for the following newsletters. (Note: do not check if you already are receiving them.)

- ☐ *Northwest Energy News* (this bimonthly magazine)
- ☐ *Update!* (public involvement newsletter mailed with the Council meeting agenda)

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(Or call Judy Allender at the Council's central office, (503) 222-5161, or toll free 1-800-222-3355 in Idaho, Montana and Washington, or 1-800-452-2324 in Oregon.)

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